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Journal

of The AMERICAN

DIETETIC ASSOCIATION

OCTOBER 1961 VOLUME 39 NUMBER 4

Fatty Acids in Margarines
Rosemarie Ostwald

Fat, Yield, and Flavor of Ground Beef
Marjorie F. Fruin and Frances O. Van Duyne

Microwave Cooking of Vegetables
Anne M. Kylen et al.

Work Sampling in the Dietary Department
Blanche I. Wise and Beatrice Donaldson

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Fatty Acids in Eleven Brands of Margarine[1]

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WITH INCREASING evidence that kind and amount of fat consumed may alter blood cholesterol and beta-lipoprotein levels, there has been renewed interest in the fatty acid make-up of oils, margarines, and shortenings (1-3). There is an abundance of reports that diets containing a high proportion of polyunsaturated fatty acids, particularly linoleic acid, affect the lipid levels of the blood in a number of animal species, including man. Saturated fatty acids, like palmitic and stearic acids, often produce the opposite effect (4,5). The role of oleic acid, a mono-unsaturated fatty acid, is still controversial. It is reported either to have no influence on lipid levels or to increase them. That is, it may act in this respect like a saturated fatty acid, not like a polyunsaturated one (6,7). If the use of polyunsaturated fat will lower the incidence of atherosclerosis in man, which is as yet by no means certain, it will be important to know more accurately than heretofore where to find linoleic acid in foods.

It is believed that the composition of vegetable oils is relatively constant and data are available in the technical literature (8-10). However, it is difficult to find data in the literature for margarines and shortenings other than "average values." One reason for this lack of information is the fact that their composition varies widely. Vegetable oils are converted to products which are solid at room temperature by one of two procedures. In one process, most of the oil is exposed to hydrogenation, and thus most of the linoleic acid is exposed to the process. In procedures used before 1940, and more recently on some margarines, a small amount of oil is completely hydrogenated and added to enough of the unexposed oil to gain the desired consistency for a spread. In either case, part of the linoleic acid present in the oil has been converted to, or diluted with, oleic and saturated fatty acids. The actual composition of the final product depends, therefore, on the method of manufacture and may vary from time to time in a given brand. The oil used also influences the composition of the end product. Its choice often depends on the market conditions at a given time.

Polyunsaturated fatty acids occur in nature chiefly in seed oils. Cottonseed, corn, soybean, and to a lesser extent, peanut and safflower oils are those most frequently used in America. Table 1 shows the fatty acid make-up of some of these oils. It will be noted that the oils contain oleic as well as linoleic

[1]Received for publication June 12, 1961.
[2]With the technical assistance of P. Miljanich.

TABLE 1 **Fatty acid composition of some fats and oils as reported by Okey *et al.* (11)**

FAT	FATTY ACIDS					
	Mono-enoic acid (reported in literature)	Di-enoic acid		Poly-enoic acid		Saturated (reported in literature)
		Reported in literature	Found in laboratory analyses	Reported in literature	Found in laboratory analyses	
	%	%	%	%	%	%
Safflower	15–26	51–78	76	0.1–3	5	5–10
Corn	23–30	56–60	52	9	0	10–13
Soy	22–25	50–55	52	1–10	5	12–14
Cottonseed, straight	15–40	50–55	54	—	0	23–27
Peanut	50–60	22–25	28	—	0	17–18
Olive	84–86	4–5	7	1	0	9–11
Lard	45–55	3–15	12	0.2	0	30–40
Butterfat	19–26	1–3	3–4	1	1	56–70
Coconut	7–8	1–2	1–3	0.2	0	89

acids and that some are rather rich sources of saturated acids as well.

The only source of information on the fatty acid composition of a given margarine available to the consumer is that found on its label. In some instances, this information is incomplete and it is often misleading to the average consumer. We are presenting in this report the fatty acid composition of eleven margarines, together with the relevant information found on their labels.

Methods

Two or three samples of each margarine were purchased, each sample in a different retail store, during March and April 1961. The samples were analyzed in triplicate for their fatty acid composition by gas-liquid chromatography of their methyl esters (12). The identity of the peaks and the "area factors" used in calculating the percentage of the individual fatty acids was established by daily comparison with the chromatograms of known mixtures of fatty acid methyl esters.

Under our experimental conditions, the trans fatty acids do not separate from their cis isomers. The values given for oleic and linoleic acids include, therefore, any trans isomers which might be present. It is well known that, in the hydrogenation of oils to margarines, there occurs a certain amount of isomerization of the naturally predominant cis forms of the unsaturated fatty acids to the trans isomers, as well as some shifts in the positions of the double bonds. Reports in the literature (5,13, 14) indicate that the nutritional effects of these isomers in terms of growth, maturation, and reproduction are equivalent to the cis forms. The trans forms of linoleic acid are not, however, active in the role of essential fatty acids (15). Little is known about their action on serum lipids (16).

Water and fat contents were determined according to the usual procedures (17). The data for the fatty acid composition of the margarines are presented in terms of grams fatty acid per 100 gm. margarine as well as grams fatty acid per 100 gm. fat in the margarine. These data were computed by multiplying the per cent of each fatty acid methyl ester (obtained from the aerograph traces) by a correction factor which accounts for glycerol in the triglycerides of the fat

$$f = \frac{3 \times \text{molecular weight of fatty acid}}{\text{molecular weight of triglycerides}}$$

Results and Discussion

Table 2 presents information found on the label of each margarine regarding its composition and retail prices. Data for fatty acid composition are presented in Table 3. The margarines in these tables are listed in ascending order of linoleic acid content of the brands. For the purposes of comparison, we have included two samples of butter. The linoleic acid content of the margarines ranged from 8 to 35 per cent, oleic acid from 20 to 60 per cent, and palmitic acid from 7 to 18 per cent. The content of

TABLE 2 Composition of some margarines as described on their packages* and their retail prices

MARGARINE CODE	PRICE PER POUND†	DESCRIPTION
A	$0.92 1.05‡	"Soy lecithin spread, no cholesterol." "Contains unsaturated oil." "Cold Process." "Ingredients: soy oil (hardened), soy lecithin (unsaturated), corn oil (unsaturated), water, saf-flower seed oil (unsaturated), soy milk."
B	0.92‡	"Made from 100% safflower oil." "Made from partially hardened safflower oil, water, finely ground soybeans, vegetable lecithin."
C	0.55 0.59	"Made from soybean oil, water, finely ground soybeans, vegetable lecithin." "Free from animal fat."
D	0.43	"Partially hardened soybean oil, liquid cottonseed oil, lecithine."
E	0.43	"Partially hydrogenated corn oil, mono- and diglycerides, lecithin." "100% natural corn oil was the only oil used . . ."
F	0.35	"Hydrogenated soyabean oil and cottonseed oil, lecithine."
G	0.43	"Partially hardened soyabean and cottonseed oils, butter, mono- and diglycerides, lecithin."
H	0.43	"Liquid corn oil, partially hardened soybean and cottonseed oils, monoglycerides, lecithin." ". . . contains liquid corn oil as its major ingredient."
I	0.44	"Made with liquid vegetable oil." ". . . made mostly with polyunsaturated liquid vegetable oil." "All the benefits of a margarine made largely with polyunsaturated vegetable oil are yours . . ." "Liquid cottonseed oil, partially hardened cottonseed oil, monogly erides, lecithin."
K	0.69	"Poly-unsaturated, all vegetable margarine." ". . . liquid safflower oil, partially hardened soybean oil, finely ground soybeans, vegetable lecithin." "Over 83% of the vegetable oil is unsaturated." Analysis (approximate values): "moisture 15%, oleic acid 47.7%, linoleic acid 34.3%."
L	1.10	"Prepared principally from corn oil (not hardened), coconut oil (hardened), lecithin, mono- and diglycerides." ". . . has an exceptionally high content of linoleic acid." ". . . this important substance represents from 38 to 44% of the fat content."

*Descriptions relating to substances relevant to this study only are listed.

†Prices are those paid for the particular packages analyzed.

‡These are sold in 12-oz. packages at 69 and 79 cents respectively.

TABLE 3 **Composition of eleven brands of margarine and of butter**

MARGARINE BRAND	SAMPLE	WATER*	FAT*	GRAMS PER 100 GM. MARGARINE†							GRAMS PER 100 GM. FAT‡						
				Lauric acid	Myristic acid	Palmitic acid	Stearic acid	Oleic acid	Linoleic acid#	Total saturated fatty acids	Lauric acid	Myristic acid	Palmitic acid	Stearic acid	Oleic acid	Linoleic acid	Total saturated fatty acids
		%	%														
A	1	4.8	95.7	1.4	1.1	14.6	5.6	60.9	7.9	22.7	1.5	1.1	15.2	5.8	63.6	8.2	23.6
	2			2.6	1.9	12.9	5.6	58.2	8.8	23.0	2.7	2.0	13.5	5.8	60.9	9.2	24.0
B	1	18.0	80.0	0.4	0.4	7.6	5.2	53.7	9.0	13.6	0.4	0.5	9.5	6.5	67.2	11.3	16.9
	2			0.1	0.3	7.8	5.1	53.7	9.4	13.3	0.2	0.4	9.7	6.4	67.2	11.8	16.7
C	1	15.1	80.8	—	—	8.2	5.9	50.4	12.7	14.1	—	—	10.2	7.3	62.4	15.7	17.5
	2			—	—	9.0	5.6	48.3	14.5	14.6	—	—	11.1	6.9	59.8	17.9	18.0
D	1	14.1	79.5	0.2	0.3	10.4	5.7	42.9	16.5	16.6	0.3	0.4	13.1	7.2	54.0	20.8	21.0
E	1	15.6	80.0	0.3	0.1	8.1	5.0	48.2	14.6	13.5	0.4	0.1	10.1	6.2	60.2	18.3	16.8
	2			0.5	0.1	6.1	4.9	49.0	15.8	11.6	0.7	0.1	7.6	6.1	61.2	19.8	14.5
	3			0.1	0.1	7.8	4.4	46.5	17.4	12.3	0.1	0.1	9.8	5.5	58.2	21.7	15.5
F	1	12.8	82.7	0.1	0.3	9.9	5.1	46.5	17.1	15.4	0.2	0.4	12.0	6.1	56.2	20.8	18.7
	2			0.1	0.1	9.6	4.8	45.3	18.7	14.6	0.2	0.1	11.6	5.8	54.7	22.7	17.7
G	1	16.6	79.3	0.6	1.2	18.5	2.6	28.9	22.7	22.9	0.8	1.5	23.3	3.3	36.5	28.6	28.9
	2			0.1	0.9	17.9	3.6	30.0	21.8	22.5	0.9	1.1	22.6	4.5	37.8	27.5	29.1
H	1	15.9	79.3	0.1	0.1	9.5	4.4	34.1	27.5	14.1	0.1	0.2	12.0	5.5	43.1	34.6	17.8
	2			—	0.1	9.5	4.8	34.8	26.6	14.4	—	0.1	12.0	6.1	43.9	33.5	18.2
I	1	16.9	79.0	—	1.0	16.8	3.4	21.1	31.8	21.2	—	1.3	21.2	4.3	26.7	40.3	26.8
	2			0.1	1.0	16.8	3.2	21.1	31.9	21.1	0.2	1.2	21.2	4.1	26.7	40.4	26.7
K	1	14.8	78.7	0.6	0.5	7.2	5.1	28.2	33.4	13.4	0.7	0.7	9.1	6.5	35.9	42.4	17.0
	2			0.4	0.3	6.8	5.3	29.3	32.8	12.8	0.6	0.4	8.7	6.8	37.2	41.6	16.5
L	1	14.6	79.8	3.9	2.1	8.7	6.2	20.3	34.2	20.9	4.9	2.6	10.9	7.8	25.5	43.1	26.2
	2			4.7	1.6	8.7	6.7	19.5	34.1	21.7	5.9	2.0	10.9	8.4	24.5	43.0	27.2
	3			4.4	1.7	8.6	6.3	19.4	34.9	21.0	5.4	2.2	10.8	7.9	24.4	43.9	26.3
Butter¶	1	9.6	87.1	3.4	12.5	27.8	8.2	21.3	3.3	51.9	3.9	14.4	31.9	9.5	24.5	3.8	59.7
	2			3.6	12.4	29.6	7.6	18.8	2.2	53.2	4.1	14.2	34.0	8.7	21.6	2.6	61.0

*Small amounts of solids, not soluble in petroleum ether account for the balance of the sum of fat and water content.

†Means of triplicate determinations.

‡These numbers do not total 100 due to the correction made for glycerol in the fat.

#As the only other polyunsaturated fatty acid, small amounts of palmitoleic acid were found in some of the brands. "A" contained 1.2%; "B" 0.2%; "E" 0.4%; "F" 0.3%; "G" 1.2%; "I" 1.7%; and "K" 0.3%, respectively.

¶Butter contains a number of fatty acids other than those listed.

total unsaturated fatty acids was quite similar for all samples analyzed, 55 to 70 per cent. The variation of composition between the various samples of the same brand of margarine was remarkably small. This is probably due to the short time interval between purchases. The experimental variations, as shown by the range of values for each set of triplicate determinations, were between 0.5 and 5 per cent of the total fatty acid content. The variations of the values for oleic and linoleic acid were between 2 and 3 per cent.

Our value for the linoleic acid content of brand "L" is very similar to that given on their label, as well as to that found by Boyer *et al.* (18). Brand "K" claimed a higher oleic acid and a lower linoleic acid content than we found. Such variation between batches of the same brand is, however, not unusual. Our linoleic acid values for other margarines tended to be higher than those previously reported. We ascribe this partly to our use of newer analytical methods and partly to changes in the manufacturing methods of the margarines in question.

A comparison of Tables 2 and 3 shows that in several cases, neither the price of the margarine nor the information supplied on the label gives the consumer a clue to the fatty acid composition. In fact, some of the statements are rather misleading to persons not well acquainted with the current information regarding the metabolic effects of different fats and fatty acids. The fact that a margarine has been "made" from an unsaturated oil or from 100 per cent corn oil, soybean oil, or safflower oil is undoubtedly correct, but it creates the impression that the possible beneficial effects of these oils are still in effect in the margarine. The statement that a margarine "contains liquid oil" is meaningless, unless it is known how much of the fat is liquid and how much of the liquid is oleic and linoleic acid respectively. The same is true for the statement that the fat "contains unsaturated oils."

It is to be noted that wherever the label mentions liquid oil (non-hydrogenated) first as the major ingredient, and the hydrogenated or hardened oil second, the linoleic acid content runs above 25 per cent. However, in order to avoid misinterpretations, it would be desirable from the consumer's point of view for the labels to include statements concerning the approximate amounts of some of the fatty acids.

Summary

The fatty acid composition of eleven commercial margarines has been determined. The linoleic acid

content varied from 8 to 34 gm. per 100 gm. margarine.

Because of the heightened interest of physicians, dietitians, and homemakers in food fats containing high proportions of polyunsaturated fatty acids, it would appear desirable that the labels of margarines give a clear and candid statement of their fatty acid composition.

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St. Louis—The City of "Food Firsts"

St. Louis, host city to the 44th Annual Meeting of The American Dietetic Association, to be held October 24-27, contributed a number of new foods and beverages to our national food habits during the early years of this century. Some of these have had a decided impact on our American way of eating. The ice cream cone and iced tea were both born at an earlier national gathering—the Louisiana Purchase Centennial Exposition of 1904. And, St. Louis also saw the first manufacture of peanut butter near the turn of the century.

As early as 1858—only seven years after Jacob Fussell established the first ice cream plant in Washington, D. C.—St. Louis also boasted such a plant. Then, at the 1904 Exposition history was really made. The ice cream booth selling 5- and 10-cent dishes of the frozen delicacy ran out of dishes! Seeing the predicament, a quick-thinking neighboring concessionaire, Ernest Hamwi, rolled his crisp pastry called "Zalabia" into a cornucopia which hardened as it cooled. He handed it to the ice cream vendor, who added a 5-cent scoop of ice cream and sold it to a customer. His enthusiasm encouraged further cooperation between the two vendors, and the cone—born of expediency—soon rivalled the ice cream soda, which had originated at the Philadelphia Fair of 1888. St. Louis, a foundry town, long furnished the special baking equipment needed to make "cones" (perhaps derived, with a southern accent, from the first syllable of cornucopia?).

The conversion of hot tea to iced tea was also prompted at the same fair by the need for a cool liquid. It was made possible by the supply of river ice stored the preceding winter in sawdust for summer needs.

Another beverage, ordered at the old Planters' Hotel as "I'll have a drink like the one you made for Tom," became the now-familiar Tom Collins.—*Contributed by Alice A. Damon, University of Kansas Medical Center, Kansas City, Kansas.*

Fat Content, Yield, and Palatability of Ground Beef[1]

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ALTHOUGH PUBLISHED research on the effect of various factors on composition, yield, and quality of meat is extensive, a review of the literature revealed few studies on ground beef. Examples of the kinds of information available are analyses of samples of Hamburg steak obtained on the market (1), compiled values of amounts of nutrients present in ground beef (2), and reports of determinations of percentage composition and yield of different cuts and grades of beef (3-5). In addition, there are various standards and specifications for ground beef; "Institutional Meat Purchase Specifications for Fresh Beef—Series 100" (6) includes descriptions of a regular and a special ground beef. However, no reports were found dealing with the effect of grade, cut, and trim of beef on the yield and palatability of ground beef patties.

This study was undertaken to obtain information on the fat and moisture content of ground beef prepared from U. S. Commercial and U. S. Standard untrimmed and trimmed chucks and rounds and to determine the effect of these grades, trims, and cuts on the yield and palatability of cooked beef patties. These were prepared by procedures used in quantity food service since the possibility of using lower grades of beef and less expensive ground meat would be especially important to some institutions.

Procedure

Sides of beef from twelve carcasses, six graded U. S. Commercial and six, U. S. Standard, were obtained one at a time from a packing plant in Peoria, Illinois. All grading and selection were done especially for this study by an experienced person working under specifications of the Meats Division of the University of Illinois. While the breed and age of the animals were unknown, weight was considered in selection to minimize variation within each grade. After seven to nine days of aging at an approximate temperature of 34° to 36°F., a side was delivered to the University for sampling, analysis, cooking, and judging.

SAMPLING

The round and the chuck were removed from a side and each was treated as follows: All external fat was removed, weighed, and ground through a ½-in. breaker plate. The cut was boned; all remaining lean and internal fat were weighed together, ground through a ½-in. breaker plate, and mixed. A 6-lb. random sample was taken from this mixture.

Half of the 6-lb. sample was immediately reground through a 1/16-in. plate. The remaining 3-lb. sample was mixed with a calculated weight of the ground external fat and the mixture was reground. The amount of fat to be added was determined by the ratio of the weight of external fat to the weight of lean and internal fat in the original cut. Thus the latter sample was representative of the "untrimmed" cut, while the former was representative of the "trimmed" cut. This procedure was adopted in an attempt to determine the effect of both trimmable and non-trimmable fat in chuck and in round.

A Toledo Size 11 grinder was used for the 3-lb. samples, while larger amounts were ground with an Enterprise Size 23 grinder. All parts of the grinder were thoroughly washed and dried after each grinding, and all meat was refrigerated until needed.

CHEMICAL ANALYSIS

From each 3-lb. sample thus prepared, a 1-lb. sample was removed and reground three times through a 1/16-in. plate with the Toledo grinder. Approxi-

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[2]The authors wish to express their appreciation to Mildred Bonnell for advice and use of quantity equipment; to Dr. B. C. Breidenstein for assistance in obtaining the meat; and to Dr. Walter C. Jacob and Jerry Fruin for assistance with the statistical analyses.

mately 125 gm. of this finely divided meat were placed in a polyethylene sample bottle until analyzed.

Fat and moisture determinations were made in duplicate on each sample according to the methods given by the Association of Official Agricultural Chemists (7) with these minor modifications. Weighing bottles containing ground meat weighing approximately 4 gm. were held overnight in an oven at 50°C. before being dried at 102°C. for 2 hr. Fat was extracted for 16 hr. with anhydrous ethyl ether using a Goldfisch apparatus.

COOKING AND JUDGING

Since it was decided that a better comparison of different samples of meat could be made if only a limited amount of seasoning were present, there was no attempt to prepare the most palatable product by including other ingredients. To each 2-lb. sample of ground beef, 1 tsp. salt was added, and the sample was lightly mixed by hand. Meat was dipped onto a dietetic scale with a No. 12 ice cream scoop and the weight of meat was adjusted to 90 gm. Each portion was shaped quickly by hand to an approximate diameter of 4 in. and thickness of ¼ in. and placed on a wire rack on an aluminum tray approximately 9 by 13 in. Eight patties were prepared from each of the four samples (trimmed and untrimmed chuck and trimmed and untrimmed round) and a separate tray was used for each sample. Weights of the trays and racks were recorded before and after the patties were placed on them.

The four trays were placed in a Hotpoint electric deck oven set at 375°F. which had been allowed to cycle twice to reach uniform heat. Patties were cooked 15 min. The trays were removed from the oven and weighed to determine loss by evaporation. After the patties were removed, the trays were again weighed to determine losses as drippings.

The patties were coded and served to a taste panel of six experienced judges who scored them for intensity and desirability of flavor, juiciness, compactness, tenderness, and color on a five-point continuum of desirability to undesirability. Total scores were obtained by adding the ratings for the indidual palatability factors; on this basis, the maximum possible total score was thirty.

STATISTICAL ANALYSIS

Differences in fat and moisture content, yield, and total scores due to grade, cut, and trim were tested for significance by analysis of variance (8). Percentages of crude fat and moisture were calculated, and the means of duplicate determinations were used in the analysis. Percentage yields were calculated by subtracting evaporative and dripping losses from 100 per cent. Mean scores for the individual palatability characteristics were obtained but were not analyzed statistically. No attempt was made to check the consistency or discriminating ability of each judge or the variation between judges.

TABLE 1 Effect of grade, cut, and trim on fat and moisture content of ground beef

SAMPLE DIFFERENTIATION	GRAND MEANS	
	Fat content	Moisture content
	%	%
Grade		
U.S. Commercial	20.3**	60.0
U.S. Standard	15.5	64.4**
Cut		
Chuck	21.1**	59.9
Round	14.7	64.5**
Trim		
Trimmed	14.8	64.7**
Untrimmed	21.0**	59.7

**Significantly higher at the 1% level than the comparable mean for grade, cut, or trim.

Results and Discussion

Grand means and sub-grand means for fat and moisture content are presented in Tables 1 and 2. A grand mean included all possible replications and variations in that sample differentiation; i.e., a grand mean for chuck included values for all replications of both grades and trims. A sub-grand mean omitted values for any two of the following: one grade, one cut, one trim. For example, chuck, trimmed, omitted the values for chuck, untrimmed, and for round.

FAT CONTENT

The differences in fat content between ground beef prepared from two grades, cuts, and trims were highly significant (Table 1). U. S. Commercial beef contained significantly more fat, 20.3 per cent, than U. S. Standard, 15.5 per cent; chuck, 21.1 per cent, had more fat than round, 14.7 per cent; and untrimmed and trimmed samples had 21.0 and 14.8 per cent, respectively.

Sub-grand means showing the relationships of trim and grade, trim and cut, and grade and cut to the fat and moisture content of ground beef are presented in Table 2. The difference in fat content between grades was decreased by trimming (a difference of 6.5 per cent for the untrimmed vs. 3.2 per cent for the trimmed). This indicated that external or trimmable fat was largely responsible for the variation in fat content between these grades. Conversely, the difference in fat content between cuts was increased by trimming, indicating that internal fat was more responsible than external fat for the variation in fat content between chuck and round. Grade did not affect significantly the difference in fat content between cuts.

The mean percentages of fat found in trimmed chuck and round, 19.1 and 10.6, respectively, were similar to the figures for fat content of raw chuck,

TABLE 2 Relationship of fat and moisture content of ground beef to trim and grade, trim and cut, and grade and cut

SAMPLE DIFFERENTIATION	FAT CONTENT		MOISTURE CONTENT	
	Sub-grand means	Differences between sub-grand means	Sub-grand means	Differences between sub-grand means
	%	%	%	%
Grade and trim				
U. S. Commercial, trimmed	16.4		63.2	
U. S. Standard, trimmed	13.2	3.2†	66.2	3.0†
U. S. Commercial, untrimmed	24.3		56.8	
U. S. Standard, untrimmed	17.8	6.5*	62.6	5.8*
Cut and trim				
Chuck, trimmed	19.1		61.6	
Round, trimmed	10.6	8.5**‡	67.7	6.1*‡
Chuck, untrimmed	23.2		58.2	
Round, untrimmed	18.9	4.3	61.3	3.1
Grade and cut				
U. S. Commercial, Chuck	24.2		57.0	
U. S. Commercial, Round	16.5	7.7	63.0	6.0*#
U. S. Standard, Chuck	18.1		62.8	
U. S. Standard, Round	13.0	5.1	66.0	3.2

*Significantly higher at the 5% level than the comparable difference.
**Significantly higher at the 1% level than the comparable difference.
†Trimming decreased the differences in fat and moisture content due to grade significantly.
‡Trimming increased the differences in fat and moisture content due to cut significantly.
#The difference between moisture content of U. S. Commercial chuck and round was significantly higher than the difference between moisture content of U. S. Standard chuck and round.

16 per cent, and round, 11 per cent, given in Agriculture Handbook No. 8 (2). However, the mean values obtained for the fat content of the different samples in this study were markedly higher than those reported (5) for Commercial trimmed chuck and trimmed and untrimmed round.

MOISTURE CONTENT

Mean values for moisture ranged from 59.7 to 64.7 per cent and were affected significantly by grade, cut, and trim (Table 1). The moisture content of U. S. Standard was significantly higher than U. S. Commercial; round, higher than chuck; and trimmed, higher than untrimmed. Differences between grades were decreased by trimming, but trimming increased the difference between cuts (Table 2). Also, there was a significantly higher difference between moisture content of U. S. Commercial chucks and rounds than between U. S. Standard chucks and rounds.

YIELD

Mean values for percentage yield (evaporative and dripping losses in per cent subtracted from 100) are presented in Table 3. The yield of meat patties cooked in the oven from ground round, 67.9 per cent, was significantly higher than that from meat patties prepared with ground chuck, 63.9 per cent. Neither grade nor trim had a significant effect on yield. Mean cooking losses by evaporation ranged from 14.8 to 16.7 per cent for the two grades and trims of ground chuck and from 14.4 to 16.2 per cent for ground round. Losses in drip from the two cuts showed greater differences, from 18.0 to 23.2 per cent for chuck and from 16.4 to 17.6 per cent for round. Leverton and Odell have reported (4) losses by evaporation of 25.0 and 24.5 per cent after broiling for 20 min. for ground beef and extra lean ground beef, respectively. Although losses by evaporation were slightly higher, calculation from raw and cooked weights showed the yields, 75 and 75.4 per cent, to be higher also than those obtained in the present study.

PALATABILITY

The mean palatability scores ranged from 18.1 for patties prepared from ground U.S. Standard untrimmed round to 20.1 for those made from U. S. Standard trimmed chuck (Table 3), with a possible score of 30 which was equivalent to very good, 24 good, 18 fair, 12 poor, and 6 very poor. Thus the patties received ratings between fair and slightly above fair. The grades of meat used, the lack of any added ingredients except salt, and the cooking procedures may have contributed to the low scores. Further work should be done on preparing patties from these grades of beef to learn whether good products can be obtained.

The grand mean for the palatability scores of patties prepared from chuck, 19.8, was significantly higher than the mean for the patties prepared from round, 18.5. Grade and trim had no significant effect on palatability. Examination of the mean scores for the individual palatability factors indicated that patties made from chuck were rated slightly but consistently higher in juiciness than those prepared from round and that the former usually received slightly higher ratings than the latter for flavor and texture.

It is interesting that the taste panel did prefer

TABLE 3 Mean values for fat content of ground beef and for percentage yield and total palatability scores for ground beef patties

GRADE AND TRIM	FAT		YIELD		PALATABILITY SCORES†	
	Chuck	Round	Chuck	Round	Chuck	Round
	%	%	%	%		
U. S. Commercial, trimmed	21.4	11.4	65.2	67.4	20.0	18.6
U. S. Commercial, untrimmed	27.0	21.6	61.6	67.4	20.0	18.8
U. S. Standard, trimmed	16.7	9.8	64.5	68.8	20.1	18.7
U. S. Standard, untrimmed	19.4	16.2	64.5	67.9	19.0	18.1
Grand means	21.1**	14.7	63.9	67.9**	19.8**	18.5

†Based on a maximum score of 30.
**Significantly higher at the 1% level than the comparable grand mean for the other cut.

patties made from chuck. As this cut generally is lower in cost than round, this might find practical application where other ingredients should not be mixed into a beef patty, such as in some hospital therapeutic diets. However, since round gave a significantly higher yield, this cut might be more economical for recipes where additional ingredients are specified.

Summary

Ground beef prepared from U. S. Commercial and U. S. Standard untrimmed and trimmed chucks and rounds were analyzed for fat and moisture. The effect of grade, trim, and cut on yield and palatability of cooked beef patties was also determined.

The mean fat content of ground chuck varied from 16.7 per cent for U. S. Standard trimmed to 27.0 per cent for U. S. Commercial untrimmed; and for ground round, from 9.8 per cent for U. S. Standard trimmed to 21.6 per cent for U. S. Commercial untrimmed. Significantly higher fat contents were found in U. S. Commercial grade than in U. S. Standard, in chuck than in round, and in the untrimmed than in the trimmed samples. Moisture contents also differed significantly but in the reverse order. Trimming decreased the variation between grades and increased variation between cuts with respect to both fat and moisture contents. The tendency of chuck to have a higher fat content than round held for both grades, but the tendency of round to have a higher moisture content than chuck was not as pronounced in U. S. Standard as in U. S. Commercial.

A significantly greater yield was obtained when meat patties were prepared from ground round than when made from ground chuck. However, a taste panel showed a significant preference for the latter, although the total mean score, 19.8, indicated the patties were considered only slightly above fair. Neither grade nor trim significantly affected yield or palatability. The influence of these two grades, cuts, and trims on yield and palatability of more acceptable products should be investigated before any recommendations for use are attempted.

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The Working Years in the U.S.

Boys born today can expect a working life one-third longer than that faced by their grandfathers born in 1900—a significant addition to the manpower resources of our nation.

The Health Information Foundation reports that the average age of first employment for males has been from about 15 to 17.5 years, and at age twenty the number of years of retirement which can be anticipated rose from 2.7 to 6.3 years. However, the nonproductive or dependent years today are no greater as a *proportion* of total life expectancy.

Because more women are now employed, the proportion of non-working years for both sexes, has actually decreased. By these measures, the time for education of the young and leisure for older people after retirement, while longer today, is less of a drain on income during employed years.

Microwave Cooking of Vegetables[1]

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THE SPEED OF microwave cooking suggests possibilities for developing more convenient and efficient procedures for food preparation in homes and institutions. However, any new method of cooking also raises questions about the ways in which nutritive value and palatability will be affected.

Institution-type electronic ovens were used in the early investigations of the effect of microwave energy on foods. After comparing three methods of cooking vegetables, Thomas *et al.* reported (1) that greater losses of water-soluble nutrients occurred when vegetables were boiled in a large amount of water either on a conventional range or in an electronic range than when they were cooked in a small amount of water in a pressure saucepan. No significant differences in either vitamin retention or palatability were found by Stevens and Fenton (2) when frozen peas were cooked in a small amount of water in a stewpan or in a package in an electronic range. Campbell, Lin, and Proctor concluded (3) that the retention of ascorbic acid in fresh and frozen broccoli and in partially thawed frozen peas was generally higher after microwave than after conventional cooking. Similarly, higher retentions of ascorbic acid were obtained by Gordon and Noble (4) in vegetables cooked in an electronic range designed for home use than in those prepared by conventional methods. However, broccoli, cabbage, and cauliflower were milder in flavor when boiled in large amounts of water than when cooked in small amounts of water in a pressure saucepan or by microwaves. More recently, Chapman and coworkers (5) investigated the effect of length of cooking in a home-type electronic range on palatability and nutrient content of broccoli.

The present series of studies was undertaken to compare the ascorbic acid contents and palatability of seven fresh and three frozen vegetables cooked by a conventional method or in a home-type electronic oven. Several of the studies were repeated in different years and in a few, two methods were used in determining ascorbic acid.

Experimental Procedure

Italian Green Sprouting broccoli, cabbage, cauliflower, Wando peas, Improved Commodore and Wade green beans, Jogun soybeans, and Early Hybrid No. 7 spinach were used. All vegetables except cabbage and cauliflower were grown under the supervision of the Department of Horticulture and harvested on the day they were cooked or frozen. Cabbage and cauliflower were purchased from a local retail store on the day the experimental work was carried out or on the previous day. In the latter case, the vegetable was held in the refrigerator overnight. Cooking methods and analytical procedures were repeated four times for each study on a fresh or frozen vegetable. Between June 1957 and September 1959, two studies were carried out on fresh broccoli and green beans; three, on peas; and two each, on frozen broccoli, snap beans and spinach.

To provide frozen vegetables for cooking, lots of freshly harvested broccoli, green beans, and spinach were processed on four days in each of two years. Detailed procedures for preparation, blanching, cooling, and packaging were similar to those described previously (6). For broccoli, 900 gm. were blanched for 3 min. in 8 qt. water; 960 gm. green beans, for 3 min. in 6.4 qt. water; and 900 gm. spinach, for 1 min. in 8 qt. water. Enough of each vegetable was processed to provide samples for cooking and analysis after four and eight months

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of freezer storage. The mean temperature of freezer storage was —23.5°C. ±0.12°.

The preparation of the fresh vegetables for cooking and the details of the conventional method used for cooking vegetables in a tightly covered saucepan were described by Van Duyne *et al.* (7). For electronic cooking, the manufacturer's directions were followed with some modifications. Vegetables were placed in cold tap water in a Pyrex glass casserole with a cover, and the cooking time was counted from the time the casserole was placed in the range.[2] Cooking times and amounts of water which would result in similar products from both methods were determined in preliminary tests. Details of the procedures, such as weights of vegetables, amounts of water, and lengths of cooking time, are given in Table 1. In 1959, an additional sample of fresh peas was cooked with each replication to determine whether bringing the water to a boil in the electronic range before adding the peas would affect the ascorbic acid retention and palatability. This modified procedure was used for soybeans.

Frozen vegetables were cooked without preliminary thawing. However, a block of frozen spinach was cut into six pieces before it was placed in the saucepan and was stirred at 1 min. intervals for the first 4 min. of cooking. For microwave cooking, a solid block of spinach was placed in a casserole and broken apart and stirred after 4 and 8 min. Frozen broccoli was stirred after 2 min. of conventional cooking and after 3 min. in the electronic range.

Moisture determinations were made on raw and cooked samples of the fresh and frozen vegetables by drying weighed ground portions to constant weight in a vacuum oven maintained at 55° to 60°C. Reduced ascorbic acid was determined in samples of the raw and cooked vegetables and in aliquots of the cooking liquids. A modification (7) of the method of Loeffler and Ponting (8) was used for all vegetables except soybeans. Soybeans were extracted as the other vegetables were, but ascorbic acid was determined in the extracts and cooking waters by the titration method of Tillmans, Hirsch, and Hirsch (9) as modified by Bessey and King (10) and Bessey (11). In 1958, ascorbic acid in frozen green beans and spinach was determined by both the modification of the Loeffler and Ponting method and by a xylene-extraction method (12), using the formaldehyde treatment to correct for nonascorbic acid reducing substances. Results of the two methods were compared to learn whether substances were formed during microwave cooking which would interfere with the determination of ascorbic acid by the former method.

The cooked vegetables were rated for palatability by three to five members of the foods research staff. Scores were given for appearance, color, texture, flavor, and absence of off-flavor using a five-point scale where 5 corresponded to very good; 4, good; 3, fair; 2, poor; and 1, very poor. The numerical values for each factor were defined by adjectives to and in judging, and the total scores were obtained by adding the scores for the individual palatability factors. Statistical comparisons of total palatability scores and of per cent retentions of absorbic

[2]A Hotpoint 10RE1 Electronic Cooking Center was used throughout these studies. As a power check, 1 liter of distilled water was heated in a 2-liter beaker for 2 min. each day before cooking was started. The mean rise in temperature was 21.1°C.±0.27°.

TABLE 1 **Cooking procedures**

VEGETABLE	MEAN WEIGHT OF VEGETABLE	CONVENTIONAL COOKING				MICROWAVE COOKING	
		Amount of boiling water	Mean time to return to boiling	Boiling period	Mean total cooking time	Amount of water	Total cooking time
	gm.	*gm.*	*min.*	*min.*	*min.*	*gm.*	*min.*
Broccoli							
Fresh	300	150	1.7	10.0	11.7	150	8.0
Frozen	196	100	1.4	6.0	7.4	50	6.0
Cabbage	400	200	1.3	14.0	15.3	200	12.0
Cauliflower	400	200	1.5	7.0	8.5	200	8.5
Peas	300	150	1.9	12.0	13.9	150	10.0
						150	7.0*
Green beans							
Fresh	300	150	1.8	14.0	15.8	150	12.0†
Frozen	235	100	3.2	8.0	11.2	100	8.0
Soybeans	300	150	1.9	20.0	21.9	300	17.5*
Spinach							
Fresh	400	0	—	7.0	7.0	0	7.0
Frozen	324	150	—	7.0	7.0	50	10.0

*Vegetable was added to boiling instead of cold water.

†In 1957, green beans were cooked 12 min. and allowed to stand 3 min. after removal from the electronic range before determinations were begun. In 1958, they were cooked 14 min. and analyzed immediately.

acid were made by calculating Student's "t" for paired data and testing for significance of differences between means (13).

Results and Discussion

Cooking times required to obtain products of similar degrees of "doneness" are given in Table 1. The mean total times used for fresh vegetables ranged from 7.0 to 21.9 min. for the conventional cooking method and from 7.0 to 17.5 min. for the microwave method. For frozen vegetables, the ranges were from 7.0 to 11.2 and 6.0 to 10.0 min. for conventional and microwave cooking, respectively. In seven out of ten cases, microwave cooking required less time than conventional; in two, the times were the same; but for frozen spinach, cooking in the electronic oven took longer. However, in the last instance, the block of frozen spinach was not divided into pieces prior to placing in the electronic oven as it was before conventional cooking.

ASCORBIC ACID RETENTION

Mean values for the moisture and ascorbic acid contents of raw and cooked vegetables are presented in Table 2. Only results for one study on each vegetable are reported. Although there was some variation in the ascorbic acid content of the fresh vegetables in the different years, the patterns of retention were quite similar. When ascorbic acid in frozen green beans and spinach cooked conventionally and with microwaves was determined by the modification of the Loeffler and Ponting method and by a xylene-extraction method, a comparison of the results indicated that apparently the use of the latter method to correct for nonascorbic acid reducing materials was unnecessary.

Mean per cent retentions of ascorbic acid after conventional and microwave cooking of fresh vegetables were, respectively: broccoli, 83 and 79; cabbage, 69 and 72; cauliflower, 92 and 87; peas, 73 and 74; green beans, 74 and 78; soybeans, 79 and 76; and spinach, 61 and 56. None of the differences due to cooking method was significant. When peas were added to boiling water and cooked in the electronic oven for 7 min., the same mean per cent retention of ascorbic acid was obtained as when the peas were started in cold water and cooked for 10 min. Ascorbic acid retained in the cooking liquids was lower at the 1 per cent level for cabbage (11 per cent) and peas (15 per cent) and at the 5 per cent level for green beans (7 per cent) after microwave cooking than after conventional cooking (14, 23, and 9 per cent, respectively). Retention of ascorbic acid in the cooking water for peas started in boiling water in the electronic range was lower at the 5 per cent level (17 per cent) than for peas cooked by the conventional method (23 per cent). No significant differences in per cent retention were found in the cooking liquids of the other four vegetables—broccoli, 10 and 11; cauliflower, 7 and 6; soybeans, 11 and 10; and spinach, 5 and 9 per cent, respectively.

Gordon and Noble (4) used considerably larger amounts of water and shorter cooking times for conventional boiling and less water and shorter times for microwave cooking than were used in these investigations. They reported much lower percentage retentions of ascorbic acid after conventional boiling and slightly higher retentions after microwave cooking.

In Table 3, the mean values for the moisture and

TABLE 2 **Moisture and ascorbic acid content of raw and cooked fresh vegetables**

VEGETABLE	RAW		COOKED					
					Ascorbic acid†		Mean retention (raw weight basis)	
	Moisture†	Ascorbic acid†	Cooking method	Moisture†	Vegetable	Cooking water	Vegetable	Cooking water
	%	*mg./gm.*		%	*mg./gm.*	*mg./ml.*	%	%
Broccoli	89.1 ±0.08	1.46 ±0.042	conventional#	87.7 ±0.67	1.23 ±0.033	0.54 ±0.065	83	10
			microwave#	86.3 ±0.28	1.33 ±0.052	0.55 ±0.022	79	11
Cabbage	92.9 ±0.12	0.47 ±0.023	conventional	92.3 ±0.14	0.37 ±0.025	0.20 ±0.014	69	14
			microwave	91.4 ±0.27	0.41 ±0.024	0.17 ±0.009	72	11**
Cauliflower	91.0 ±0.89	0.82 ±0.056	conventional	89.4 ±1.05	0.78 ±0.062	0.28 ±0.031	92	7
			microwave	89.0 ±1.12	0.76 ±0.045	0.14 ±0.022	87	6
Peas	80.3 ±0.59	0.38 ±0.018	conventional	79.2 ±0.59	0.29 ±0.011	0.38 ±0.020	73	23
			microwave	77.4 ±0.64	0.30 ±0.017	0.41 ±0.027	74	15**
			microwave	78.2 ±0.48	0.30 ±0.009	0.38 ±0.021	74	17#
Green beans	91.5 ±0.40	0.18 ±0.009	conventional	91.5 ±0.95	0.15 ±1.010	0.06 ±0.010	74	9
			microwave	90.4 ±1.12	0.16 ±0.012	0.07 ±0.006	78	7*
Soybeans	68.7 ±1.33	0.24 ±0.009	conventional	65.7 ±1.04	0.20 ±0.004	0.25 ±0.071	79	11
			microwave	66.0 ±1.92	0.20 ±0.013	0.30 ±0.023	76	10†
Spinach	92.8 ±0.16	0.52 ±0.025	conventional	88.9 ±0.33	0.52 ±0.032	0.44 ±0.160	61	5
			microwave	89.4 ±0.27	0.42 ±0.015	0.31 ±0.027	56	9

*Indicates that the mean per cent retention after microwave cooking is significantly lower at the 5% level.
**Indicates that the mean per cent retention after microwave cooking is significantly lower at the 1% level.
†Mean values of four replications and standard deviations of the means.
‡Means for these samples include five instead of four values.
#Cooking procedure modified by adding vegetable to boiling instead of cold water

TABLE 3 **Moisture and ascorbic acid content of raw and cooked frozen vegetables**

VEGETABLE	FRESH (raw)		FROZEN						
	Moisture	Ascorbic acid	Length of freezer storage	Cooking method	Moisture†	Ascorbic acid†		Mean retention (fresh raw weight basis)	
						Vegetable	Cooking water	Vegetable	Cooking water
	%	*mg./gm.*	*months*		%	*mg./gm.*	*mg./ml.*	%	%
Broccoli	89.4 ±0.32	1.29 ±0.062	4	raw‡	91.6 ±0.20	0.85 ±0.022	—	70	—
			4	conventional	89.7 ±0.25	0.66 ±0.024	0.30 ±0.025	48	12
			4	microwave	89.2 ±0.20	0.74 ±0.026	0.41 ±0.045	52	9
			8	raw‡	91.3 ±0.34	0.70 ±0.024	—	60	—
			8	conventional‡	89.2 ±0.31	0.62 ±0.017	0.38 ±0.007	47	11
			8	microwave‡	89.5 ±0.07	0.63 ±0.012	0.39 ±0.015	48	7*
Green beans	95.5 ±0.15	0.16 ±0.009	4	raw	92.6 ±0.14	0.10 ±0.011	—	62	—
			4	conventional	90.5 ±0.05	0.08 ±0.011	0.05 ±0.011	38	8
			4	microwave	90.9 ±0.31	0.08 ±0.012	0.05 ±0.010	38	8
			8	raw	93.7 ±0.25	0.09 ±0.011	—	53	—
			8	conventional	91.0 ±0.33	0.06 ±0.009	0.04 ±0.005	30	5
			8	microwave	91.8 ±0.30	0.06 ±0.007	0.03 ±0.007	28	6
Spinach	92.8 ±0.016	0.52 ±0.025	4	raw	92.1 ±0.25	0.29 ±0.018	—	40	—
			4	conventional	88.5 ±0.74	0.21 ±0.011	0.14 ±0.015	22	10
			4	microwave	88.8 ±0.29	0.25 ±0.020	0.20 ±0.018	26	5*
			8	raw	91.9 ±0.19	0.23 ±0.027	—	36	—
			8	conventional	89.7 ±0.22	0.16 ±0.016	0.09 ±0.015	20	8
			8	microwave	88.5 ±0.33	0.20 ±0.023	0.13 ±0.041	23	5**

†Mean values for four replications and standard deviations of the means.
‡Means for these samples include three instead of four values.
*Indicates that the mean per cent retention was significantly lower at the 5% level.
**Indicates that the mean per cent retention was significantly lower at the 1% level.

ascorbic acid contents of raw and cooked frozen vegetables are given. Retentions of ascorbic acid in broccoli, green beans, and spinach prepared by conventional and microwave methods were 48 and 52, 38 and 38, 22 and 26 per cent of the amounts present in the fresh samples after four months of freezer storage and 47 and 48, 30 and 28, and 20 and 23 per cent after eight months, respectively. Again, no significant differences due to cooking method were found. The amounts of ascorbic acid retained in the cooking liquids after microwave cooking were lower at the 5 per cent level for broccoli after eight months' storage and for spinach after four months, and at the 1 per cent level for spinach after eight months' storage. In each of the above cases, less water was used for cooking in the electronic range than for conventional cooking. Stevens and Fenton found (2) no significant difference in ascorbic acid retention in frozen peas cooked in similar amounts of water by microwave and conventional methods.

When the results of this series were compared with those of other investigations on the effect of microwave and conventional cooking on the retention of ascorbic acid in vegetables, the amount of cooking water and, probably to a lesser extent, the cooking time, seemed to have a greater influence than the method of cooking. This is in agreement with the conclusions of Thomas *et al.* (1) that cooking time and the amount of water were determining factors in the retention of nutrients in cooked vegetables.

PALATABILITY

Mean total palatability scores for cooked fresh and frozen vegetables are given in Table 4.

Scores for fresh vegetables ranged from 18.5 to 22.9 after conventional cooking and from 19.3 to 22.4 after microwave cooking; the highest possible score was 25. There were only slight differences in total palatability scores for individual vegetables, and in three cases these were not significant. Scores were significantly lower at the 1 per cent level for fresh broccoli and cauliflower and at the 5 per cent level for soybeans after microwave cooking than after conventional cooking. Fresh green beans were rated higher at the 1 per cent level after microwave cooking.

Palatability ratings for frozen vegetables ranged from 19.7 to 22.8 after conventional cooking and from 20.9 to 23.3 after microwave cooking. In all cases vegetables cooked by the latter method received slightly higher scores than those cooked by the former method. The differences were significant at the 5 per cent level for broccoli after four months of freezer storage and at the 1 per cent level for green beans after four and eight months' freezer storage.

Since mean total scores for vegetables cooked by the microwave method were sometimes higher and sometimes lower than those for vegetables cooked by the conventional method, neither method was found to be consistently superior on the basis of palatability. Stevens and Fenton reported (2) no difference in the palatability of frozen peas cooked

TABLE 4 Mean palatability scores for fresh and frozen vegetables cooked by a conventional method and in an electronic range

VEGETABLE	COOKING METHOD	LENGTH OF STORAGE	NUMBER OR RATINGS	MEAN SCORES					MEAN TOTAL SCORES
				Appearance	Color	Texture	Flavor	Absence of off-flavor	
Fresh Vegetables									
		months							
Broccoli	conventional	—	20	4.0	3.4	4.1	4.0	4.8	20.3
	microwave	—	20	3.8	3.2	3.6	4.0	4.8	19.4**
Cabbage	conventional	—	19	4.3	4.0	4.2	4.2	5.0	21.7
	microwave	—	19	4.2	4.2	4.2	4.1	5.0	21.7
Cauliflower	conventional	—	12	4.9	4.1	4.9	4.0	5.0	22.9
	microwave	—	12	4.5	3.8	4.6	3.8	4.9	21.6**
Peas	conventional	—	20	4.0	4.5	4.4	4.6	5.0	22.5
	microwave	—	20	4.0	4.4	4.4	4.5	5.0	22.3
	microwave	—	20	4.0	4.5	4.5	4.4	5.0	22.4†
Green beans	conventional	—	12	3.4	3.4	3.4	3.4	4.9	18.5
	microwave	—	12	3.8	3.7	3.4	3.5	4.9	19.3**
Soybeans	conventional	—	19	3.8	3.2	4.4	4.3	4.8	20.5
	microwave	—	19	3.3	3.1	4.3	4.2	5.0	19.9*†
Spinach	conventional	—	16	4.0	4.4	4.1	4.3	5.0	21.8
	microwave	—	16	3.9	4.2	4.1	4.2	5.0	21.4
Frozen Vegetables									
Broccoli	conventional	4	16	3.3	5.0	4.6	4.6	4.9	22.4
	microwave	4	16	4.4	5.0	4.4	4.5	5.0	23.3*
	conventional	8	12	3.9	4.5	4.0	4.3	4.8	21.5
	microwave	8	12	4.2	4.6	4.0	4.4	4.9	22.1
Green beans	conventional	4	16	3.6	3.1	3.9	4.1	5.0	19.7
	microwave	4	16	4.0	3.9	3.9	4.1	5.0	20.9**
	conventional	8	16	3.8	3.6	4.3	4.1	4.8	20.6
	microwave	8	16	4.3	4.4	4.2	4.0	4.6	21.5**
Spinach	conventional	4	15	4.0	4.9	4.3	4.6	5.0	22.8
	microwave	4	15	4.4	4.9	4.2	4.5	5.0	23.0
	conventional	8	18	3.9	4.4	3.8	4.0	5.0	21.1
	microwave	8	18	3.8	4.3	3.9	4.2	5.0	21.1

*Indicates significant difference at the 5% level.
**Indicates significant difference at the 1% level.
†Cooking procedure modified by adding vegetable to boiling instead of cold water.

by microwave and conventional methods, while Gordon and Noble found (4) that broccoli, cabbage, and cauliflower were milder and the first two greener when cooked in large amounts of boiling water than when cooked in small amounts in a pressure saucepan or in an electronic range.

Summary

There were no statistically significant dfferences in the amounts of ascorbic acid retained in seven fresh and three frozen vegetables cooked by a conventional and a microwave method. The cooking liquids of fresh cabbage, peas, and green beans, of frozen spinach after four months' storage, and of frozen broccoli and spinach after eight months retained significantly less ascorbic acid after microwave than after conventional cooking.

Mean total palatability scores for three fresh vegetables—broccoli, cauliflower, and soybeans—were significantly lower after microwave cooking than after conventional cooking, while fresh green beans, broccoli frozen four months, and frozen green beans received significantly higher ratings after preparation in an electronic range. However, the differences in the ratings for the individual vegetables due to method of cooking were so small as to be of no practical importance.

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Selling the Health Field to the Public

One of the major problems in the health field is selling itself to the public. So diagnosed Arthur Godfrey when he spoke to the National Health Forum in New York City in April. In part, he said:

You are salesmen for the most valuable material product of all—health. You have life for sale. It is very valuable merchandise. It is more fragile than the best crystal—more ephemeral than the fragrance of perfume—more precious than diamonds—more delicate than the finest lace—more scientific than a space vehicle—and worth more than any of these or all of them.

I believe you have several sales problems. To put it in industrial terms, you've made health such a popular item that you've run into working capital problems; you need more hospitals, more beds, more operating theaters, more faculties and facilities of every kind; production costs are approaching a critical point; your costs of sales in some health agencies have gone sky high and, to a degree, you have been removed from the sales counter and the close contact it provides with the ultimate consumer. All in all, these have affected the balance sheet item called good will.

You retain a tremendous balance of good will, however, on which to draw. Yet you cannot ignore the fact that it will take affirmative action to maintain public confidence and support. It is not enough to view with alarm, to cry "socialistic wolf"—you must be *for* something and not "agin" everything.

I see a definite need for a single national organization that can speak authoritatively for all segments of health activities where the individual organizations have a common position or a common problem. There are many problems faced in common by almost all of your sixty active associate and sustaining members [of the National Health Council].

The complex of health associations, health agencies, and health-oriented companies do not provide a known and readily available central source of authentic information, such as that offered by the trade associations in every major industry and many of the special interests. You speak with many voices, as is proper, but you do not have, insofar as I have been able to discover, the mechanics to speak forcefully with a single voice when a single voice would be most effective. There is nothing undignified or reprehensible about such a trade association. This is the kind of self-discipline exercised by business and industrial groups throughout the country. The pace of communications today is such that the media do not have the time, the manpower, or, on occasion, the interest to explore the attitudes and responses of multiple groups, particularly when they are headquartered in widely separated cities. Another factor to which you should give consideration is that a group which speaks for all elements of a broad interest speaks with greater authority and effectiveness than a specific segment of that group which can be accused of self-seeking.

You might say that doctors and hospitals have become public property because public interest and public participation—through increased knowledge and increased insurance—have broken the shell that surrounded medicine only a few years back. The realization of this changed position in the professions of medicine, I am sure, has been too slow in coming.

It would be fair to say that: your program plans have outstripped available manpower; your ideas have outstripped available funds; public desires for services have far outstripped available facilities; and your communications have outstripped all of these.

With this, the desired communications pattern becomes even more complex. It must be adapted to attract more manpower in all areas—doctors, nurses, technicians. It must be adapted to prove the desirability and urgent need for additional funds, preferably from the private sector of the economy which is not now meeting its needs. It must be adapted to curb public desires for services which are uneconomic, unreasonable, or unnecessary.

If health groups are to retain the confidence of the public, they must actively and affirmatively exercise a responsible approach to these problems. I believe that some one organization should be extolling the values of health organizations and particularly of national health agencies, explaining to the public why they exist, what they do, what they have accomplished, how the United States is a healthier nation because of their operations.

Work Sampling in the Dietary Department[1]

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THE PURPOSE of any working organization is to perform its work in the most efficient manner with the greatest possible economy and the least possible effort and to provide for personal development of its employees (1). A food service is specifically aimed toward the efficient and economical production and serving of good food. Because of increasing labor costs, the efficiency of food service units in institutions has been evaluated, using direct measurement methods, such as the per-meal labor cost and the per-meal labor time (2-4).

Industry has been evaluating jobs for setting time standards by using work sampling. Mahaffey reported (5) the use of work sampling to measure jobs classified as indirect labor; this sampling technique required less time than a continuous time study. The accuracy of work sampling techniques was compared with that of continuous time studies (6), using fourteen industrial operations. The average difference between the two methods was 2.5 per cent.

Work sampling is a quantitative technique for measuring and analyzing the activities of employees; it is particularly useful in analyzing non-repetitive activity where complete descriptions are not available (7). This technique requires the use of random observations and is based on the law of large numbers which states that the distribution of random samples tends to resemble the total distribution from which the samples are drawn. To eliminate bias, it is essential that each minute of a day have an equal chance of being drawn in a work sampling study. Only if this is done, is it possible to have true random samples and to have inferences of known reliability (8, 9).

Principles which govern the work sampling technique include (10):

(a) Only groups of personnel whose work is similar should be compared in a single study.

(b) Less than 1000 observations are of little value.

(c) All observations should be made at random intervals and throughout all hours of a working day.

(d) Observations should be made over a period of at least two weeks.

The variety of purposes for which work sampling has thus far been used would seem to indicate the possibility of using this technique for studying the work of hospital dietary personnel, although few studies in this area have been reported. Johnson (11) investigated the use of work sampling for analyzing the activities of middle management personnel in food services and as a basis for evaluating curricula needed to produce more effective managers.

In college and university residence halls, a work sampling study was conducted to determine why there was such a dissimilarity in student payrolls in similar residence halls (12). This study showed that the difference in payrolls was due to differences in equipment and layout.

Another purpose for which work sampling has been used was to rate supervisors (13). The sampling technique was used to discover where a lack of job knowledge existed, to aid in the development of managerial ability, and to select people for promotion. Other companies have used work sampling for cost control, for justification of new equipment, and for determining delay time (14-16).

The purpose of this research was to utilize the work sampling technique for analyzing the work activities of some hospital food service employees. The data obtained can provide information for more

[1]Published with the approval of the Director, Wisconsin Agricultural Experiment Station. Data were taken from a thesis submitted by Blanche Irons Wise in partial fulfillment of the requirements for the degree of Master of Science. The research was performed while Mrs. Wise was on appointment as a dietetic resident at the Veterans Administration Hospital, Madison. Received for publication January 3, 1961.

effective classification and scheduling of the employees.

Method

In performing work sampling studies, Heiland and Richardson suggested (7) four procedures to be followed:

(a) Study the work activities and classify them into categories.

(b) Determine the times at which random observations are to be made.

(c) Design forms for recording and analyzing the data.

(d) Make the observations and record the data.

Basically, these procedures were followed for the present study.

This research was performed in a 475-bed hospital in which the food service was decentralized with serving kitchens located on the upper six floors and the main kitchen on the second floor. Cooks from the main kitchen and food service workers from the cold foods area were sent to the serving kitchens during the hours of meal service. The dietary department employed a staff of eighty-six people, fifty-seven of whom were on duty per day. Only non-professional personnel were observed.

CONTINUOUS TIME STUDY

Activities of twelve full-time dietary employees working in the main kitchen, the bake shop, and the cold foods areas were recorded by means of a one-day continuous time study. These activities were originally classified into six categories which were used by the hospital in an annual man-power hour study. However, due to the large number of activities which fell into the miscellaneous category, the activities were reclassified into nine categories:

(a) Supervision.
(b) Clerical.
(c) Food preparation.
(d) Food service.
(e) Food distribution and transportation.
(f) Cleaning.
(g) Washing pans and dishes.
(h) Training and attending classes and meetings.
(i) Personal time.

Although none of the employees washed dishes during a one-day pilot study, washing pans and dishes was included as a category. It was felt that some of the employees would be doing this type of work on other days. The percentage of the total time spent during the day of observation in each category was determined for each of the twelve employees. These percentages ranged from 0 to 72.6. The greatest percentage for each employee was in the category of food preparation, except in one instance when the percentage was higher for supervision. Using the percentages for food preparation and Table 66 in Barnes (9), it was determined that between 787 and 1107 observations were needed to give a ± 3.0 per cent absolute accuracy at the 95 per cent confidence level. Rowe indicated (17) that a ± 3.0 to 3.5 per cent degree of accuracy would be adequate for studies used primarily as a basis for scheduling work activities.

Thus, plans were made to obtain approximately 1000 observations for each person observed. It did not seem feasible to record this number of observations in one month because, with the number of employees being observed and the necessary frequency of the observations, the sampling study would have resembled a continuous time study.

WORK SAMPLING STUDY

Since one purpose of the study was to provide basic data for more effective classification, seven employees with different classifications were selected for the final work sampling observation. In this hospital, classification of the employees is based on job descriptions, with the employee assuming more responsibility as his classification is raised. Employee A in this study had the highest classification with Employees B, C, D, E, F, and G having progressively lower classifications. For example, Employee A was the assistant chief cook and Employee B was relief head cook. It was expected that their work would require highly developed skills and supervisory activities. Those with a low classification would be less skilled and would do more manual labor.

These employees worked a five-day week consisting of 8½ hr. a day including their meal time; there were two shifts covering the time from 6:00 A.M. to 6:30 P.M. or 750 min. Therefore, in a two-month period of eight weeks, each employee would work approximately forty days. Twenty-four observations per day would make a total of 960 observations. However, with the two shifts, it was necessary to arrange for forty observations a day to obtain twenty-four per shift. This number of observations was also planned to compensate for days which the employees took for vacations and for sick leave.

Since the times at which the sampling observations were to be taken were to be random, forty numbers per day ranging from 1 to 750 were drawn from a table of random numbers. These numbers were then arranged in numerical order and converted to clock times, such as 001 was converted to 6:01 A.M., 360 to 12 noon, and 720 to 6:00 P.M.

Recording forms were developed with the random times appearing in the left column and the code letters for each of the seven employees listed at the top of a column. The employees' work schedules were checked for a week at a time; days off, the shift they were working, and any vacation time

were recorded in advance of the observation day.

Employees were observed in a random order starting at the random time indicated on the data sheet; the activity was categorized at the time and only the number of the category was recorded. This method seemed to rule out any bias on the part of the observer which might have occurred when the activity was recorded and later categorized. There were a few occasions, however, when it was impossible for the observer to be present. The activity was then recorded by an assistant or by the worker and later categorized.

To determine whether a sufficient number of samples was being obtained, the number of observations for each of the seven employees was totaled at the end of each week, and the total divided by the number of days worked. In most cases, the observations per day ranged from 25 to 28, which was greater than the 24 deemed necessary.

Results

The total number of observations for one day, one week, one month, and two months is shown in Table 1. Only 933 and 999 observations were recorded for Employees E and F, respectively, because they were on vacation for at least one week during the two-month study. Employees A and C also took vacation time and Employee D was on sick leave for several days; this accounted for the variation in the total observations. The total number of observations for each employee did come within the range from 787 to 1107 which, according to Barnes (9), was essential for a ± 3.0 per cent accuracy at the 95 per cent confidence level.

The number of observations for one day, one week, one month, and two months for each work category for each employee was divided by the total observations for each particular time sequence to obtain the estimated percentage of time spent in each category of work. The results of these calculations are shown in Table 1.

The results for the two-month period were checked for absolute accuracy by using the formula:

$$Sp = 2\sqrt{\frac{p(1-p)}{N}}$$

where Sp = absolute accuracy
p = the percentage of the total time spent in one particular category of work
N = total observations for one employee (9)

The absolute degree of accuracy for Employee A in the category of supervision was calculated as follows:

$$Sp = \sqrt{\frac{.258(.742)}{1005}} = 2\sqrt{\frac{.191436}{1005}} = 2(1.38) = 2.76 = 2.8\%$$

Thus, for the above example, it could be assumed with 95 per cent assurance of accuracy that Employee A spent 25.8 ± 2.8 per cent of her total working time in supervisory activities. The absolute degree of accuracy for the number of observations during a two-month period in the nine activity categories for seven main kitchen employees is also shown in Table 1.

The majority of the percentages indicated an absolute accuracy of less than ± 3.0 per cent. In only three cases was it above the desired limits; fewer observations on fewer days were recorded for Employees A, E, and F than for the other employees.

One day of work sampling proved no better than the one-day continuous time study. When data for one day, one week, one month, and two months were compared (Table 1), it was obvious that the absolute accuracy for the data for all but the two-month period would be higher than the desired ± 3.0 per cent, since the number of observations was lower.

The percentage of time spent in one activity showed great variation between a one-day, a one-week, and a one-month study. Perhaps the greatest variation occurred in the category with the highest percentages of time, namely food preparation. The variation among the three periods of time ranged from 2.3 per cent for Employee F to 29.3 per cent for Employee E in this category. This would seem to indicate that observations for less than one month were unreliable.

There was much less variation between the percentages for one and two months. The greatest difference was in the category of food preparation for Employee F, due probably to the fact that this employee's duties were more diversified than those of any other employee studied.

Since the percentages for one and two months tended to be similar, it was concluded that the data were representative for the total work activities of the group studied. Although there were some differences between the one- and two-month percentages, it was indicated that at one month and after, a more accurate picture of typical percentage distribution of work activities began to appear. Two months including 1000 observations should be representative for the major work categories. The reactions of the personnel to a longer period would seem to be more favorable than to more readings taken in a shorter period. The employees would tend to become accustomed to the observations, and there would be less bias during the two months.

Because employees sometimes develop work patterns which are not always the same as those scheduled or indicated in the job description, all work activities of each of the seven main kitchen employees were analyzed, and some definite activity patterns were noted. The percentage of time for each employee in each category for two months is depicted in Figure 1. For all seven employees, the greatest percentages of the working time were spent in "food preparation."

TABLE 1 Number of observations, percentage of activity time represented in each of nine work categories, and absolute degree of accuracy, at the 95 per cent confidence level, for the number of observations made during a two-month period

WORK CATEGORY	EMPLOYEE A			EMPLOYEE B			EMPLOYEE C			EMPLOYEE D			EMPLOYEE E			EMPLOYEE F			EMPLOYEE G		
	Number of observations	Per cent activity time	Confidence limits	Number of observations	Per cent activity time	Confidence limits	Number of observations	Per cent activity time	Confidence limits	Number of observations	Per cent activity time	Confidence limits	Number of observations	Per cent activity time	Confidence limits	Number of observations	Per cent activity time	Confidence limits	Number of observations	Per cent activity time	Confidence limits
		%			%			%			%			%			%			%	
Supervision																					
One day	5	17.2		7	23.3		—	—		—	—		—	—		—	—		—	—	
One week	30	20.4		20	15.2		—	—		—	—		—	—		2	1.4		—	—	
One month	94	22.9		71	11.0		1	0.2		1	0.2		—	—		15	2.4		—	—	
Two months	259	25.8	±2.8	122	10.2	±1.7	3	0.3	±0.3	1	0.1	±0.2	—	—	—	23	2.3	±0.9	—	—	—
Clerical																					
One day	—	—		1	3.3		—	—		—	—		—	—		—	—		—	—	
One week	15	10.2		3	2.3		—	—		—	—		1	0.7		—	—		—	—	
One month	24	5.8		17	2.6		10	1.8		1	0.2		1	0.3		—	—		—	—	
Two months	47	4.7	±1.3	33	2.8	±1.0	12	1.1	±0.6	1	0.1	±0.2	1	0.1	±0.2	3	0.3	±0.3	—	—	—
Food preparation																					
One day	8	27.6		16	53.4		18	62.1		13	44.8		6	28.6		18	62.1		13	61.8	
One week	54	36.8		77	58.3		103	72.0		38	48.1		85	59.9		92	63.4		64	42.4	
One month	158	38.4		386	60.0		407	71.4		278	54.6		195	57.9		377	61.1		226	38.9	
Two months	417	41.5	±3.1	721	60.5	±2.8	744	70.5	±2.8	576	53.0	±3.0	529	56.7	±3.2	516	51.7	±3.1	495	42.0	±2.9
Food service																					
One day	—	—		—	—		—	—		6	20.8		6	28.6		3	10.3		6	28.6	
One week	—	—		—	—		—	—		19	24.1		22	15.5		18	12.4		35	23.2	
One month	—	—		3	0.5		—	—		106	20.8		56	16.6		78	12.6		153	26.3	
Two months	—	—	—	9	0.8	±0.5	—	—	—	249	22.9	±2.5	158	16.9	±2.5	195	19.5	±2.5	304	25.8	±2.5
Transportation and food distribution																					
One day	1	3.5		1	3.3		1	3.5		—	—		—	—		—	—		1	4.8	
One week	3	2.0		6	4.5		6	4.2		2	2.5		4	2.8		9	6.2		19	12.6	
One month	7	1.7		18	2.8		15	2.6		19	3.7		9	2.7		26	4.2		77	13.3	
Two months	27	2.7	±1.0	40	3.4	±1.1	30	2.8	±1.0	42	3.9	±1.2	25	2.7	±1.1	37	3.7	±1.2	163	13.8	±2.0
Cleaning																					
One day	6	20.7		—	—		3	10.3		5	17.2		2	9.5		4	13.8		1	4.8	
One week	4	2.7		7	5.3		10	7.0		1	1.3		8	5.6		12	8.3		7	4.6	
One month	19	4.6		32	5.0		50	8.8		29	5.7		22	6.5		41	6.6		44	7.6	
Two months	32	3.2	±1.1	53	4.5	±1.2	102	9.7	±1.8	67	6.2	±1.5	68	7.3	±1.7	64	6.4	±1.5	87	7.4	±1.5
Washing pans and dishes																					
One day	—	—		—	—		—	—		—	—		—	—		—	—		—	—	
One week	—	—		—	—		—	—		—	—		—	—		—	—		10	6.6	
One month	—	—		—	—		—	—		—	—		—	—		13	2.1		24	4.1	
Two months	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27	2.7	±1.0	27	2.3	±0.9
Training and attending classes and meetings																					
One day	2	6.9		2	6.7		3	10.3		—	—		3	14.3		—	—		—	—	
One week	4	2.7		5	3.8		8	5.6		5	6.3		4	2.8		—	—		3	2.0	
One month	15	3.7		28	4.4		24	4.2		9	1.8		7	2.1		7	1.1		3	0.5	
Two months	43	4.3	±1.3	47	3.9	±1.1	46	4.4	±1.3	17	1.6	±0.8	17	1.8	±0.9	20	2.0	±0.9	4	0.3	±0.3
Personal time																					
One day	7	24.1		3	10.0		4	13.8		5	17.2		4	19.0		4	13.8		—	—	
One week	37	25.2		14	10.6		16	11.2		14	17.7		18	12.7		12	8.3		13	8.6	
One month	94	22.9		88	13.7		63	11.0		66	13.0		47	13.9		61	9.9		54	9.3	
Two months	180	17.8	±2.4	166	13.9	±2.0	118	11.2	±1.9	134	12.2	±2.0	135	14.5	±2.3	114	11.4	±2.0	99	8.4	±1.6
Total observations																					
One day	29			30			29			29			21			29			21		
One week	147			132			143			79			142			145			151		
One month	411			643			570			509			337			618			581		
Two months	1005			1191			1055			1087			933			999			1179		

The time spent for "food service" could not be definitely correlated with the classification of the employee. It was probably more closely related to the number of patients served by the employee and the other employees with whom he worked. Time spent in food service, however, increased as the classification of the employees decreased with the exception of Employees D and E. These could be examples for a possible further study.

As would be expected, the employees with the five

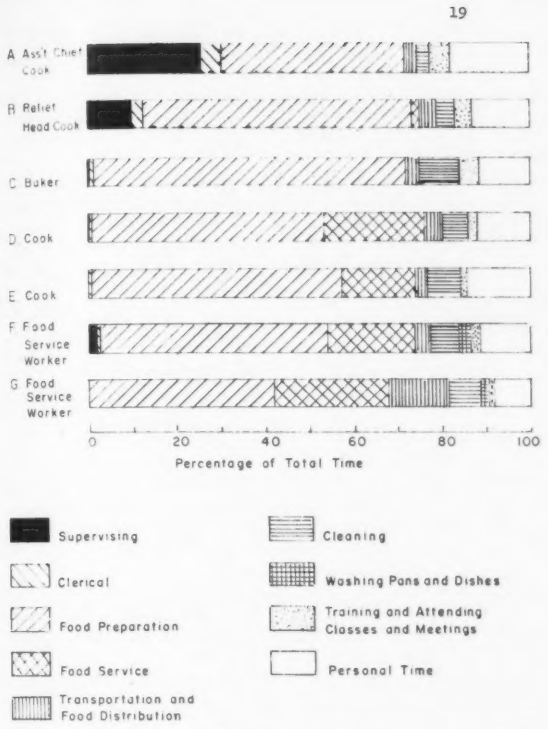

FIG. 1. *Percentage of time spent by seven employees in nine categories of work during two months.*

lowest classifications spent little time supervising, although Employee F spent some time in this category when she worked as an acting food service supervisor. Employees A and B had the highest percentages for supervision, since they both served as working leaders of shifts.

Clerical work predictably followed a pattern similar to that for supervision. Most of Employee A's clerical work was performed while she was working as a relief replacement for her immediate superior or was making labels for marking diet foods. Employee B's clerical time was almost exclusively spent in making labels for diet foods. The time in this category for the other employees was generally some incidental procedure which was not a regular part of their work.

In general, cleaning activity was lowest for the highest classification of employee and highest for Employee C. From Employee C to the lowest classification, the variation in percentage was quite small. Employee C worked in an area separated from the main kitchen, namely the bake shop, and thus did most of her own cleaning. Cleaning could possibly be assigned to an employee of lower classification.

Employees F and G occasionally worked in the employees' dining room and on these days, they washed dishes for one meal. The pans were washed by employees specifically assigned to this task who had the same classifications as employees F and G.

The percentages in the category of "training and attending classes and meetings" for Employees A, B, and C reflected the daily cooks' meeting and the weekly menu conferences which they attended. Employees D, E, and F frequently attended the daily cooks' meetings, while Employee G attended only the weekly unit meetings.

The percentage of "personal time" was greatest for the highest classification of employee and lowest for the lowest classification. This category was a problem to record because it was sometimes difficult to determine whether the activity was personal time or delay time.

Recommendations

Two requirements for a work sampling study are that the observer avoid any bias in categorizing activities and that the subjects being observed be receptive to the technique. Since the study lasted two months, it was necessary to promote cooperation with all the personnel concerned. It was discovered that some supervisors not directly connected with the study did not fully understand the purpose of the study and thus purported it to be a plan for "checking up" on employees. These difficulties, however, were largely overcome by the fact that the writer had worked on the staff and knew the employees. The employees and supervisory staff were briefed on the purpose of the study before it was started.

The results seemed to indicate that employees with the highest classification performed more supervisory and clerical work and that the activity time for employees tended to change from supervision to more cleaning as the classifications of the employees decreased. Since the percentage of time spent by Employees D, E, F, and G in food service showed no definite pattern related to the classification of the employee, it was suggested that this type of activity be performed only by the two lower classifications. This, of course, would require scheduling employees with classifications like Employees D and E so that their time could be spent in the main kitchen during meal periods.

Since only seven food service employees were studied, it possibly would be more accurate to study all the employees in the food preparation area and then calculate the percentages of total time required for each type of activity. Because the work sampling technique is based on a representative sample of the total work, findings of such a study could be analyzed to determine the time required for each type of work and the classification of employee needed to do it. A comparison of the type and amount of that work with the employee's job description might suggest reclassification.

The categories developed for this study seemed to be satisfactory with the possible exception that it might be questioned whether the loading of the hot carts in the main kitchen should be included under "food preparation" or "food service." Since a number of employees performed this task while they were also doing general cooking, it was included under food preparation. This activity certainly suggested that work simplification routines could be instituted to improve the method of loading carts.

In general, some attention should be given to the amount of diversification of activities within each classification. Could some of the clerical work be changed to a clerk's job description? Would it be more advisable to have one person of a lower classification assigned to do all the cleaning, and could one person obtain all the supplies from the storeroom and deliver them to the preparation areas? Would weekly meetings be just as adequate as daily meetings? These are some of the questions which need to be answered for more effective scheduling and to increase the operating efficiency of a department.

Summary

A study was conducted to establish a procedure which could be used for analyzing the work activities of hospital food service employees. The technique of work sampling used in industry was adapted for this purpose.

Seven employees were observed for two months using this technique. An analysis of the percentages of time each employee spent in each of nine work categories provided information for more effective classification and scheduling of employees.

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Food Economics

How much do we spend for food in the U.S.? Department of Agriculture studies show that 20 per cent of our disposable income in 1960 went for food, as compared with 23½ per cent in 1929 and 22 1/3 per cent in 1939. Also, if we had bought in 1960 the same kinds and quantities of food we ate in 1935-39, we would have spent only 14 per cent of our 1960 income.

We are now getting more for our efforts than in 1939 and 1929. Today, one hour's factory work buys considerably more than it did twenty or thirty years ago. For instance, in terms of one hour's labor time, we can today buy 2.2 lb. round steak, compared with 1.8 lb. in 1939 and 1.2 lb. in 1929; bacon, 3.5 lb. today, but only 2 lb. in 1939 and 1.3 lb. in 1929; milk, 16.6 pt. last year vs. 10.4 pt. in 1939 and 7.8 pt. in 1929; and oranges, 3.1 doz. in 1960, compared with 2.2 doz. in 1939 and 1.3 doz in 1929.

Since 1947-49, food costs have risen less than other consumer items in the government's cost-of-living index. For all items, the increase to early 1961 was 27.5 per cent, but for all food, 21.2 per cent. During this same period, rent rose 45.7 per cent and medical care, 59.6 per cent.

Preliminary Observations

Are Personal History Data of Value in Selecting Employees?[1]

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A MAJOR PROBLEM facing administrators of food service departments is the selection of unskilled employees from a labor supply of applicants whose potential job performance is difficult to assess. Selection of such employees is based mainly on a "best guess" as to which ones are most likely to succeed. Few valid methods have been developed to aid in hiring. Once selected, there remains the problem of placement so that these workers can make a positive contribution to the maximum effectiveness of the organization.

In recent years there has been increasing interest in the problem of selection and placement of food service workers. Facets of the problem discussed in the literature include the value of effective selection and placement and difficulties resulting from poor selection and placement. Most writers agree that careful selection and management of personnel is a serious responsibility and that employees should be hired on the basis of their skill, personality, and adaptability for the job. However, few discuss fully how this is done.

West and Wood observe (1) that many large organizations which have food services have personnel departments charged with the administration of manpower. However, the vast majority of food services are organized along such simple lines that personnel becomes one phase of the responsibility assumed by the person in charge of the particular unit. Thus the food service director is solely responsible for selecting, training, and supervising all employees. She is responsible for synthesizing the employee's and the employer's points of view into an adequate, functioning personnel program. The characteristics of such a program include wise selection and careful placement. West and Wood further note that the cost of hiring, training, and discharging or transferring a worker is too great to allow many mistakes in employee procurement. As a result, there is, when the labor market permits, a trend toward careful screening of each applicant.

In many instances, hiring unskilled food service employees does not pose a selection problem. Often there are more job openings than there are applicants, and the need for filling an opening immediately dictates hiring the first person who applies. Waiting may not produce any more applicants and, in addition, may result in the loss of the original applicant. The task, then, becomes one of placement, i.e., accepting or rejecting various unfilled jobs with respect to an individual who is a potential candidate for these openings. Every person having the minimum qualifications is placed in some kind of job, preferably where he can contribute the most to the organization and in which he can find job satisfaction.

Selection procedures suggested in the literature vary, but have in common the application blank and the interview. The number of steps suggested in the selection process varies from the two already mentioned to others, such as two or more interviews, letters of reference, physical examinations, and psychologic and aptitude tests.

Decisions to hire unskilled food service employees traditionally have been made during the employment interview after evaluation of personal data, previous employment records, and references. Most

[1]Reported from the unpublished master's thesis of Rita A. Connelly, "A Preliminary Study to Develop Techniques for Selecting and Placing Unskilled Hospital Food Service Employees." Received for publication May 11, 1961.

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of the selection methods used are without validation. This does not necessarily mean that they are without validity, simply that their validity is unknown. Unless there has been a systematic investigation to determine validity, any specific basis for decisions to accept or reject applicants is of undetermined value.

It was the purpose of this study to compare the personal history data on present food service employees who had been rated by their supervisors as "most effective" or "least effective" and to determine if there were any similarities or differences which might provide clues for future investigation as possible aids in hiring and placement procedure.

Scope of the Study

The study was limited to unskilled food service workers employed in full-time, non-supervisory jobs within hospital dietary departments in any of the following capacities:

(a) Cafeteria counter employees.

(b) Employees in floor kitchens of decentralized service.

(c) Employees engaged primarily in centralized tray service.

The duties of these jobs are often not rigidly defined, the employees frequently have interchangeable duties, or they do not always work according to the specified duties of the job.

Hospitals were chosen to obtain as broad a sample as was possible within the confines of the study. Thirteen hospitals from New York State participated. Six were from cities of over 200,000 population. The other seven were from smaller cities and towns ranging in population from 5,000 to 100,000. All were general hospitals; capacity ranged from 140 to 500 beds. Three were government-controlled, two federal and one non-federal; the other ten were operated as voluntary (non-profit) units, two of which were church-related or -operated and two affiliated with a university. No contention is made that this is a representative sample of hospitals in New York State.

Selection of the hospitals was limited to those which had at least two dietitians or food service supervisors who were assumed to be equally familiar with the employees and their job performance so that ratings could be considered comparable.

Methodology

To obtain personal history data from unskilled food service employees, a questionnaire was constructed of items found most frequently on application blanks or asked in employment interviews.

Because no other type of record was procurable, ratings on over-all job performance of unskilled food service employees by two or more dietitians or food service supervisors were used as measures of job proficiency. "Most effective" employees were defined as those placed in the top third of their group by each rater. "Least effective" employees were those in the bottom third of their group as ranked by each rater.

A letter was sent to the directors of the dietary departments in the selected hospitals requesting cooperation. Consent to participate was indicated by receipt of the employee ratings done by two or more raters. The questionnaires were then sent to the director of the department for distribution to the employees. Stamped return envelopes were included for each employee so that he could return his own questionnaire.

Findings

Ratings by two or more supervisors on 244 unskilled food service employees were received, and 91 per cent of the questionnaires subsequently sent to these employees were returned. The request for two or more supervisors to rate one group of employees did produce rankings of some groups by more than two supervisors. Two groups were rated by three supervisors and two groups by five. This established 61 most effective and 58 least effective employees from a possible 73, if there had been complete agreement among raters. Questionnaires were returned by 53 of the most effective and 48 of the least effective employees.

The answers from all respondents were compiled to obtain an overview of the population from which these employees were drawn. However, tabulations on all of the respondents are not discussed here. All of the respondents except one were women.

No attempt was made to exclude from the study those questionnaires that failed to provide usable information on all items. In all of the tabulations, responses were expressed as percentages of the total number of usable replies to the particular question instead of being related to the total number of questionnaires returned.

Comparisons were made of the personal history data of the most effective and the least effective employees. To test the significance of the difference between the two groups, the data were analyzed by McNemar's Chi square formula (2). The Chi square values obtained are shown in Table 1.

For only two factors was there a statistically significant difference in the personal history data of the two groups: educational level and travel time to work. Level of education is shown in Table 2.

Sixty-nine per cent of the least effective employees had completed not more than ten years of schooling as opposed to 47 per cent of the most effective employees. The major difference in level of education occurred in the two categories, 9 to 10 years and 11 to 12 years. The most effective employees were distributed in approximately equal

TABLE 1 Chi square values obtained from a comparison of personal history data of most effective and least effective employees

ITEM	CHI SQUARE
Age	3.21
Marital status	3.60
Education	8.02*
Number of children	4.02
Age group of children	2.80
Travel time	10.02*
Meal preparation at home	0.80
Length of employment	6.81
Number of previous jobs	3.60
Number of previous food service jobs	3.22
Visits to doctor	4.81
Absences due to illness	6.03
Absences due to other reasons	2.81

*Significant at or beyond the 5% level.

proportions within these two categories, while a large proportion of the least effective employees were in the category of 9 to 10 years.

There were many similarities in the educational patterns of the two groups. Approximately the same percentage of each group fell into the following categories: 8 years or less, high school graduate, and attended college.

There are inferences which might be drawn from these data. The larger percentage of least effective employees who had completed only 9 to 10 years of education might represent persons who leave school as soon as they are legally permitted to do so because of little motivation or interest. Their less satisfactory job performance might reflect a continued lack of motivation and little interest to excel. They might also have been less exposed to the competition, discipline, and routines which are a part of the school program. Consequently, it might be more difficult for them to reconcile to the competition, rules, and regulations which are a part of any job.

The other area in which the two groups differed significantly was in travel time to work as shown in Table 3. A much higher proportion of the least effective employees lived near their work. No apparent reason could be found to explain this. It may have been a result of the sampling and represent only a comparison of a rural population with an urban population. Such facets as these were not explored.

Summary and Conclusions

From the results of this limited study it would appear that personal history data are of little value in determining the potential job success of food service employees. In comparing the personal history data of the most effective employees with the least effective employees, there were statistically significant differences in only two items, education

TABLE 2 Educational level completed by most effective and least effective employees

EDUCATIONAL LEVEL	MOST EFFECTIVE EMPLOYEES*	LEAST EFFECTIVE EMPLOYEES†
	%	%
8 years or less	26	28
9 to 10 years	21	41
11 to 12 years	28	8
High school graduate	16	15
Attended college	7	8
College graduate	2	0

*53 in sample.
†47 in sample.

TABLE 3 Travel time to work of most effective and least effective employees

TRAVEL TIME TO WORK	MOST EFFECTIVE EMPLOYEES*	LEAST EFFECTIVE EMPLOYEES†
	%	%
5 min. or less	12	9
6 to 15 min.	33	65
¼ to ½ hr.	29	18
½ to ¾ hr.	12	2
¾ to 1 hr.	10	4
Over 1 hr.	4	2

*52 in sample.
†48 in sample.

and travel time to work. Even so, when one examines the data further, there does not appear to be any practical difference.

However, in developing a technique to identify most effective and least effective employees, ordinal ranking by two or more raters proved to be reliable. From the high reliability coefficients of the rankings, it was evident that the supervisors applied similar criteria in evaluating over-all job performance. A paper presenting a discussion of this technique of evaluating performance is being prepared.

Since there were so many variables which could have influenced the results obtained, future investigation with some of the variables controlled seems worthy of pursuit. Random sampling could be employed in an attempt to obtain a representative sample of all unskilled food service workers. With a larger sample, it would be possible to control such variables as size of hospital, location of hospital, length of employment, age, education, and others which may have distorted this analysis. This would provide information for more conclusive evaluation of personal history data as predictors of job success among unskilled food service employees.

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Management Development Goals and Technique[1]

DAVID L. JACKSON

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TODAY, WE HEAR and read about industry and business pulling in its "management development reins," taking a good, hard look at its management development activities, and asking itself many questions, such as: "Are or have our management development programs brought the results we expected?" This, of course, is a wise approach and fortunately the one followed in most progressive companies for, as we are learning, some of the answers resulting from self-questioning are not too favorable. I believe this type of reflection is healthy, although overdue, and I see indications that future management development programs will become more meaningful and based on identified needs —individual and group—within an organization.

Fortunately, the Ohio Bell Telephone Company, too, concluded that an effective, worthwhile management development program could not be "armchaired" by top management or by a group of training experts. To be worth while and effective, it must be based on identified training needs. In our company, an attempt was made to identify these needs through a series of interviews involving all levels of management. Strong feelings were expressed during the interviews, which the skillful interviewers were able to translate and isolate as training needs. These needs were then converted into programs with well defined objectives and a "learning purpose" which had a good chance of being carried over and applied to the daily job—which is, or should be, the ultimate aim of all management development progrems.

We classify training into two categories: "on-the-job" and "off-the-job." Our "off-the-job" activities include: college programs for selected personnel; a middle-management school at Oberlin, Ohio; an educational assistance plan for all management; an upper-management school for department heads and officers. Our "on-the-job" activities are simply involved with performing the assigned job duties.

[1]Presented at the 43rd Annual Meeting of The American Dietetic Association in Cleveland, on October 21, 1960.

I would like to explain our philosophy of how these activities are integrated and why we believe they are important. I would also like to tell you about our relatively new, six-step process we have introduced, called "Evaluation and Development Planning" (EDP), which is working successfully, according to early indications.

Evaluation and Development Planning

First, about our philosophy. We believe that the greatest amount of managerial growth, effectiveness, and development occurs on the job, performing the daily job functions. However, we also firmly believe that this rate of growth, effectiveness, and development occurs in direct proportion to the type of relationship that exists between the "boss" (the dietitian in your case) and his subordinates (your supervised people). If you subscribe to this philosophy, i.e., that good boss-subordinate relationship or atmosphere or climate is the basic requisite for managerial growth, I believe you will be interested in our "Evaluation and Development Planning."

It has a three-fold purpose:

(a) It provides a basis for evaluating an individual on the job he now holds.

(b) It provides a basis for planning an individual's growth and development.

(c) It provides a basis for estimating an individual's potential.

Another way of stating or viewing the purpose or objectives is to consider it as an approach to *thinking* about: (a) the process of evaluation and its application in a practicable and workable manner, and (b) a method of planning for the improvebent of those evaluated. The *thinking* approach involves the following six steps:

STEP NO. 1—Defining the areas of responsibility for each person who reports to you.

STEP NO. 2—Mutually establishing the standards of performance that you require in relation to each area of responsibility.

STEP NO. 3—Looking at the results obtained in

each area of responsibility and comparing them with the standards to which you and your subordinate mutually subscribed and agreed.

STEP NO. 4—Determining the cause for the results that occur.

STEP. NO. 5—Determining what needs to be strengthened or changed.

STEP NO. 6—Determining how to effect improvement.

The *thinking* involved is this: before an evaluation of an individual on the job can be made, we need to know: what is to be done, how well it should be done, what results are being obtained, and what is causing the results.

Another feature of this approach that is appealing is that the individual you are evaluating works *with* you throughout this evaluation procedure. And, as a result, you know how she feels (or you should) about her job, and she knows how you feel (or she should) about her job. In other words, the whole process or approach is aimed at improving the individual, either on her present job, or future jobs, with her full knowledge and cooperation. It is *not* a closed-session appraisal that is kept by the boss and concealed from the employee.

As you undoubtedly have surmised, this six-step process is *not* an easy approach; on the contrary, it demands time and effort of both the boss *and* the individual employee, *if* it is to be successful.

To aid our management in administering this program, we have devised a form outlining the six steps. The "boss" gives the form to the subordinate with a set of instructions, which includes an example applicable to our business. At this time, he asks the employee to complete the form and be prepared to discuss it at an established future date, usually in a week or ten days. Too, he offers to answer any questions as they may arise. The boss must also complete the six steps and enter his conclusions on the form as it relates to this individual.

By the day of the interview, the boss, as well as the subordinate, has thought long and hard about these six steps. As the interview unfolds, differences or misunderstandings of job responsibilities, standards of performance expected, and results obtained are discussed and resolved and mutually understood. It has been my experience that as soon as a positive result is recognized by both, the whole matter becomes a "way of life" on a sustained day-to-day, week-to-week, month-to-month basis. The forms are no longer needed, because the boss and subordinate understand each other. The subordinate knows what is expected, and the boss knows that the subordinate knows what is expected.

A Toast to the Dietetic Profession

To those attending the memorable Third International Congress of Dietetics in London in July, one of the highlights was the banquet. Especially impressive were the toasts offered by E. Neige Todhunter, Ph.D., of the U.S.; Margaretha Neumuller of Sweden, and Dorothy Hollingsworth, Chairman of the Congress, from Great Britain. Dr. Todhunter's "Toast to the Dietetic Profession" was a moving tribute to all those who have worked in the field. As such, we are pleased to be able to share it with those who could not hear it.

There are three great professions dedicated to the service of mankind the world over; these are medicine, nursing, and dietetics. Each of these needs the other in order to be fully effective in the care of the sick. Medicine has its sons of Aesculapius who take the Oath of Hippocrates. Nursing looks to Florence Nightingale as founder and patron saint. Dietetics—dietetics has no founding father; her origins are, in fact, a little hazy.

This young profession probably has the longest gestation period known to any profession. Babylonian clay tablets of 2500 B.C. were inscribed with details about food. Pythagoras of ancient Greece advocated exact measurement of food and drink. Hippocrates taught the value of a simple diet as the best way to cure disease; and in like manner, we can trace dietetic references throughout history.

But the profession of dietetics was born in modern times. Biologic sciences and food technology were the midwives, and the period of labor was long and not without complications! However, the lusty infant profession has had a vigorous growth—and why not? Of all groups, it knows the secret of health—proper diet!

Dietetics soon progressed beyond diet therapy. The breadth and scope of the profession is clearly shown by this great International Congress attended by representatives of forty nations, and in the variety of topics for the stimulating papers presented at the sessions. Dietetics today is concerned with the feeding of all people everywhere; in outer space, as well as in every corner of the earth; people alone or in groups; sick or well; of every age and occupation. The dietitian today carries on her work as educator, research worker, or administrator in hospitals and clinics, the public health field, schools and colleges, business and industry, institutions of every kind, the laboratory, and the armed services.

Our's is a profession dedicated to the service of mankind, firmly grounded in science, and practiced with all the art and skill of human understanding. May our profession continue to grow in knowledge, wisdom, and service with the years!

Martha Koehne, Ph. D.

The official family of The American Dietetic Association and the Headquarters staff were saddened early in August to learn of the death of the Association's seventh president (1931-32), Martha J. Koehne, Ph.D., at age seventy-seven. In the early years of the Association's history, Dr. Koehne had been most active, having served on the Executive Board in the capacity of Vice President for two years prior to becoming President-Elect in 1930.

Dr. Koehne held bachelor's and master's degrees from The Ohio State University and a doctorate from Yale. Two years of her graduate work at Yale were spent under Professor Lafayette B. Mendel. Early in her career, she was also one of the privileged ones to work as a member of Professor E. V. McCollum's staff at the School of Hygiene and Public Health at Johns Hopkins University. Although much of her career was spent as a member of the faculties of the University of Washington, Seattle; University of Tennessee, Knoxville; and the University of Michigan, Ann Arbor, she did serve one year as Director of the Department of Nutrition, Presbyterian Hospital, Columbia University Medical Center. For more than fifteen years prior to her retirement in 1952, she held the position of Chief Nutritionist of the Ohio Department of Health in Columbus.

Her research work had been directed chiefly to areas of nutrition which pertained to dental health, and she published a number of scientific papers in such publications as the *American Journal of Diseases of Children, Journal of Nutrition,* and the *Journal of the American Dental Association,* as well as this JOURNAL. She was a member of Phi Beta Kappa, Sigma Xi, and Omicron Nu, as well as the American Public Health Association, American Institute of Nutrition, American Home Economics Association, and A.D.A.

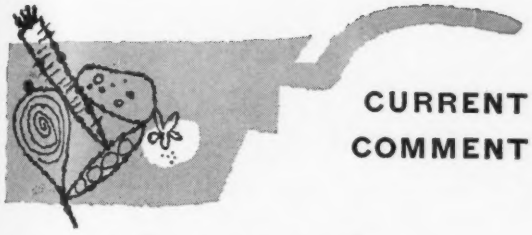
During her term of office as President of A.D.A., in 1931-32, three new state associations—Maryland, Rhode Island, and Pennsylvania—became affiliates, bringing the total at that time to twenty-one. It is notable, too, that the proceedings for her year of stewardship were published separately for the first time, rather than incorporated in the news notes of the JOURNAL.

During her presidency, the Executive Board came to grips with the problem of the acceptability of advertising in the JOURNAL (then only seven years old) and ethical practices by exhibitors at our convention. This, of course, is a problem close to the hearts of those associated with the JOURNAL and exhibits at the Annual Meeting today, and Dr. Koehne's comments about the problem in her presidential report to members strikes a responsive note. She said: "We have agreed not to solicit for new advertising in the JOURNAL and new exhibits at the convention products that have been refused the approval of the Committee on Foods (of the American Medical Association). If manufacturers of such products ask for advertising contracts and for exhibit space at the convention, the Investigation Board is to consider each application on its own merits, and to make a careful study of the *reasons* for refusal by the Committee on Foods. The company under question would be asked to submit advertising material they desired to distribute at the convention. Advertising copy for use in the JOURNAL would have to be submitted well in advance of publication so that objectionable wording could be changed. The acceptance of the product for advertising and exhibit contracts would depend upon the willingness of the manufacturer to eliminate any objectionable statements. The same policy would be adopted in the case of firms already JOURNAL advertisers whose general advertising statements had been open to serious criticism.

"We have tried not to discriminate against food products that are wholesome, have given companies under criticism time to conform to our wishes and have met with an excellent spirit of cooperation from the manufacturers. We hope *in time* to eliminate all objectionable statements about foods in advertising copy appearing in the JOURNAL, in the displays at the convention and in the material distributed at our convention exhibits."

Her contributions to the profession and the Association did not end, however, when she left office. For four years, from 1933 through 1937, she was a member of the Journal Board, advising the Editor, Mary P. Huddleson, during the time the JOURNAL was gaining professional status with each issue. During this period, too, in 1934 and 1935, she also inspected the approved "training courses for student dietitians." Later, in 1939 she assumed the responsibility of Chairman of the Community Nutrition Section, a post she held for two years until November 1941.

Dr. Koehne had lived in a nursing home in Ohio for the last several years due to ill health. It is with sadness that we chronicle the passing of a stalwart supporter of the earlier days of the profession.



CURRENT COMMENT

Pros and Cons of Cycle Menus

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WILL CYCLE MENUS be effective in your operation? Will they be worth the time and effort involved? The Dietary Department at The Ohio State University Health Center has answered these questions in the affirmative after two years of study.

For the purpose of this discussion, certain terms should be clarified: (a) *menu*—a listing of the foods to be served, including methods of preparations; (b) *cycle menu*—a "set of carefully planned menus which are rotated according to a definite pattern" (1); (c) *selective menu*—a menu which offers a choice in one or all food groups; (d) *selective cycle menu*—a menu pattern which offers a selection of food items and is rotated according to a definite pattern.

The available literature on cycle menus indicates that most organizations which favor the selective cycle menu believe it to be an effective tool for improving hospital food services (2-7). Its use builds good hospital-community relations (6); simplifies menu writing; reduces plate waste (2, 5-7); promotes standardization of recipes and food production procedures (2, 5, 6); and helps maintain better cost control (1, 2, 4, 7).

Establishing a cycle menu is not easy. The menus used must represent the dietitian's best efforts. They *must* be reviewed and corrected before being repeated (4). Pinney points out (4, 5) that cycle menus should be used as a guide and convenience, not as a fixed pattern. She also states (5) that in establishing a selective cycle menu pattern, you "just select your most successful menus and fit them into a schedule that best fits your hospital's needs."

Procedure

Before cycle menus were introduced, certain decisions regarding menu procedure were needed. The selective menu pattern used at The Ohio State University Health Center since 1951 had been successful and it was decided that it should be continued without change. Central buying and the resultant ordering procedures required that menus be completed four weeks prior to service. Menu writing must continue to be taught to the dietetic interns. With these factors pre-established, the use of a selective cycle menu was introduced for both patient feeding and staff and personnel meals in the cafeterias.

A four-week cycle was adopted to coincide with existing ordering procedures. To take advantage of seasonal changes in food supply, a different cycle was established for each season. Each cycle was used for thirteen weeks, with the first week of each cycle repeated three times and the others twice. The four seasonal cycles are repeated annually.

Initial development of the cycle menus for patients was the joint responsibility of the administrative and therapeutic dietitians. The administrative dietitian responsible for food production wrote the menus for the regular, soft, and liquid diets. These were reviewed in detail prior to their first serving, and after that, weekly at the menu conference. This meeting is conducted by the administrative dietitian and attended by a patient food service dietitian, a food service supervisor from the patient food service area, and dietetic interns working in these areas. After a complete cycle had been reviewed and served, minor adjustments were made as needed.

The regular, soft, and liquid menus as approved by the menu conference became the basis for developing the master modified menus. The patient food service dietitian responsible for modified menus wrote four master menus: bland, diabetic-reducing, low-residue, and low-sodium. As many of the foods from the other three menus as possible were used. Again, the menus were reviewed weekly after service and minor adjustments made to coincide with those made on the regular, soft, and liquid menus. A similar procedure was followed in developing cycle menus for the two staff and personnel cafeterias. Each dietitian worked out her own to meet the specific needs of her cafeteria. The four-week cycle was also followed in the cafeterias to adhere to the same ordering procedures. All menus were reviewed carefully after service to make adjustments.

Advantages

There is always a certain degree of apprehension and hesitation when any new procedure is inaugurated. The introduction of cycle menus was no exception. It was necessary for the dietary department staff to evaluate the advantages and disadvantages of cycle menus thoroughly in order to present the new system decisively and with authority to the employees.

We considered some of the advantages of cycle menus to be:

(a) The time involved in menu writing is minimized. Writing of the original menus is an extensive project, of course. It should be remembered, however, that menus would need to be written, even though they were not part of a cycle. The original menus must represent the best ideas of the writer. After these are developed, the time spent in succeeding weeks is reduced, and weekly menu writing then consists of reviewing established menus and making desired changes and/or additions. Changes may be needed because of the unavailability of an item, procurement difficulties, low acceptance of an item, the availability of new and/or better food items or recipes, production or service difficulties with some items, or the occurrence of holidays requiring special menus.

An analysis of the time spent in menu writing indicated that developing regular weekly menus had previously required 8 to 12 hr. When cycle menus were introduced, menu writing was reduced to 3 to 4 hr. each week, including the menu conference and the completion of desired changes. There has also been a comparable time saving in writing modified menus. Previously, 5 to 6 hr. each week were required. With cycle menus, the patient food service dietitian can now attend the menu conference and review and change the modified menus in 2 to 3 hr. a week. Thus, about half to two-thirds of the time previously spent on menu writing is now available for other duties. A similar time-saving could be demonstrated for the two cafeterias.

This "saved" time has been used effectively in recipe standardization, food production, employee training, and other duties.

(b) Standardization of procedures is simplified. Cycle menus clearly define the items to be served. In turn, these indicate the recipes to be used, the production methods needed, and the serving procedures required. These become the focal point for standardization in all areas. Cycle menus narrow the whole problem of standardization and make it seem more feasible.

(c) More acceptable menu items and menu combinations are offered to patients and customers. Unpopular foods and combinations can be replaced with others. This offers an opportunity to develop food acceptability information. Also, common menu-writing errors of poor combinations of color, flavor, and texture can be eliminated through repeated review of the menus before re-use.

(d) Employee training is easier. Repetition of the menus enables the employees to become more familiar with fewer procedures. Skill, speed, and confidence in performance generally follows familiarity. This in turn may well lead to a smoother operation.

(e) Dietetic interns have an opportunity to become familiar with cycle menus. Since the dietary department considers the cycle menu a valuable management tool, it is felt that experience with it will be useful to the young dietitian in her future positions.

However, so that she is not deprived of the opportunity to write ordinary menus, both methods are taught. Original menu planning is taught in the main kitchen and both cafeterias. In one cafeteria, the intern replaces one week of the cycle with menus she plans. She then does the ordering for and supervises the production of her own menus. In the second cafeteria, she reviews and makes necessary adjustments for one or two weeks of the established cycle. In the main kitchen, she uses both methods for the patient menus. She plans one week's menus for the regular, soft, and liquid diets, although these menus are not actually produced. She also reviews and adjusts established menus for the patients through the medium of the menu conference.

Pitfalls to Be Avoided

There are also factors which may discourage the use of cycle menus if they are not considered and resolved. These possible disadvantages include:

(a) Repeated cycle menus may become monotonous to the patient and the cafeteria customers. A short cycle or one which presents the same items on the same day each week may cause monotony. At the University Hospital, the average patient stay is eight days. A four-week cycle was thus more than adequate in preventing monotony. In addition, the use of a selective menu enables the patient to decide whether he will repeat an item on his menu. The regular menu offers a choice of entrée, vegetable, dessert, and beverage at both lunch and dinner. The breakfast menu is virtually à la carte. An even larger selection of items is offered in the two cafeterias; thus monotony becomes even less of a problem.

(b) Unacceptable food may be offered to the consumer if there are errors in the original menus. This problem will arise only if menus are not reviewed prior to re-use. This has been resolved through our weekly menu conferences.

(c) Cycle menus could conceivably be more costly. This would be true if changes were not made to incorporate seasonal foods, such as the fresh fruits and vegetables available primarily during the summer. The use of a different cycle for each season solved this problem. Writing four cycles was considered easier and less time-consuming than making the many necessary changes in one cycle. With all the needed changes, the original cycle would be lost.

(d) Resistance to change may result in the discontinuance of a cycle menu before the end of a fair trial period. Time must be allowed for making necessary changes in procedures and work schedules and for orienting all concerned.

The Dietary Department considered and resolved

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these possible disadvantages to its satisfaction. After approximately two years' use, we consider the cycle menu an effective management tool. When properly developed to meet the individual needs of a given food service operation, it can improve and simplify food production and service.

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A Recipe Standardization Project

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OUR RECIPE STANDARDIZATION project was begun to provide recipes for a new selective cycle menu. There were additional goals of improving the quality and controlling the cost of food served to both patients and cafeteria patrons. The project was guided by the Assistant Director of Dietetics in charge of Food Production and Service and by the Director of Dietetics. Formulating the recipes and procedures was the responsibility of the dietetic intern.

Before starting on the recipes, the dietetic intern spent considerable time in the food production area to familiarize herself with the equipment and procedures and to become acquainted with the staff and employees.

The recipe standardization was begun in the test kitchen, using small quantity recipe books and the new cycle menu. References in this JOURNAL, other professional publications, and material from college classes were used, but it was felt that additional help was needed. Therefore, Drs. Pearl Aldrich and Grace Miller of Michigan State University were consulted. They shared their extensive experience in recipe development and standardization which proved extremely helpful, especially in formulating procedures and developing the work sheet and recipe format.

The first step in developing a standardized recipe in quantity was the selection of a small quantity recipe from a reliable source, the yield usually being not over ten portions. Recipes calling for easily obtainable ingredients and practical procedures were chosen.

The item was then prepared as directed in the original recipe. Notes were made on a work sheet of the following information:

(a) Ingredients in weights. If the original recipe gave a measure, the ingredient was measured and then weighed.

(b) Procedure. Any information which would be helpful in writing the final recipe was included.

(c) Yield. This was recorded in three forms: weight, measure, and the number of stated-size portions.

(d) Cooking loss in per cent.

(e) Cost.

The product was then evaluated by a panel of dietitians, food service supervisors, and kitchen personnel who tasted and gave their opinions of the product in terms of flavor and appearance. They noted their appraisals and recommended revisions of the recipe in terms of one or more of four changes:

(a) Change in proportion of ingredients.

(b) Change in type or form of ingredients.

(c) Omission or addition of an ingredient or ingredients.

(d) Change in procedure.

Other factors which were considered were: ease of preparation and service in quantity, availability of ingredients, and cost.

The evaluation of a recipe for vichyssoise, for example, included the following comments: "Flavor—good, possibly needs a little more salt; appearance—consistency good and smooth, color good—white; ease of preparation—straining of the potato mixture will be difficult in large quantity. Recommended revisions: increase salt by ½ tsp.; try using potato flakes instead of fresh potatoes."

The extent and number of changes determined whether the quantity could be enlarged on the next trial. Some alterations, such as variations in the amounts of seasonings, could be made at the same time that the quantity was increased. However, variations in the proportion of a thickening agent, for example, could be more satisfactorily made before a larger quantity was tried. If the yield was to be increased after the first trial, it was usually best to double the recipe on the first increase.

Making Adjustments and Revisions

The third step involved successive trials of the recipe, incorporating the recommended revisions from the previous trial until the product was satisfactory in all respects. It was evaluated, of course, after each trial. The maximum number of trials made on any one item was seven.

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After a recipe had been increased to yield twenty to twenty-five servings, production in quantity was then considered possible. Quantity was defined as an amount which would be at least as large as the smallest yield desired for service in the hospital and large enough for convenient production with large quantity equipment. Extension to quantity was more rapid with some items than with others, depending on whether they were hard-to-work-with items. For example, most recipes for broth soups could be increased more rapidly than those for cream soups. Special attention was given to the yield at the first quantity trial, for at this level it was more likely to deviate than in previous trials. If the yield varied more than 10 per cent from what was anticipated, another trial was run or an adjustment was made in the amounts of ingredients.

When a product was made in quantity, advanced planning made it possible to incorporate it in the cafeteria or patient menu, and an effort was then made to determine its acceptability. However, not enough time was available to gather data and make a valid statistical analysis, and evaluation by department personnel was therefore relied on most heavily. If the product was satisfactory after trial production in quantity, the final recipe was written.

Writing the Recipe

The fourth step was writing the recipe. The format was worked out early in the project, since it determines much of the thinking throughout experimentation. An 8 by 11 in. card was chosen. Each recipe has its own stencil for printing, allowing for variation in spacing of the basic format. The recipe is printed the long way of the card, with the name, file number, portion size for both cafeteria and patient service, and date of completion of the recipe appearing at the top. Ingredients are listed in the first column on the left side, being specified in any way necessary for clarity and accuracy, such as grade, drained or undrained weight, or method of pre-preparation. Four "yield" columns are listed to the right of the ingredients. Both cooks and daily production sheets were consulted to learn which yields would be most useful. The amounts in the yield columns are kept constant within each category of food. For example, all soup recipes are written for 5, 10, 15, and 30 gal.

Amounts are given in weights, except for less than ½ c. of seasonings, which are listed by measure. Where measure is more accurate and convenient than weight, the measure is also given. Canned and packaged items are listed in even can or package numbers where possible and consistent with quality.

Procedure is explained in the far right column. Horizontal rules divide the card so that the numbered procedures appear to the right of the ingredient(s) to which they pertain. Equipment to be used is specified, and times and temperatures are indicated where necessary. Otherwise, word pictures of the appearance of the product and estimation of time spans are given, as well as approximate total preparation time, if such information would be of value. Crucial points in production are noted.

The back of the recipe card has a chart for use in periodic costing. Each cost column is divided in half, one side for unit cost of each ingredient and the other for total cost of the ingredient.

Use-Testing

The final step is to have each recipe made by one or more cooks before it is printed and put into use. This will assure the cooks' understanding of the recipe and provide an opportunity to train them in the use of standardized recipes.

The true test of the effectiveness of this project lies in the training of employees and supervisors in the use of standardized recipes. Careful supervision and training are needed to obtain the quality of food which the recipes are designed to produce. It must also be remembered that recipe standardization is never finished, for recipes must change as people, equipment, and food products change.

Interns Participate in Work Simplification

NANCY PARKINSON HILL

Dietetic Service,
Veterans Administration Hospital,
Hines, Illinois

THE WORK SIMPLIFICATION training program for dietetic interns at the Veterans Administration Hospital, Hines, Illinois, is a fertile source of new ideas for improving the efficiency in the Dietetic Service. The dietetic interns are encouraged to apply principles learned to projects of their own choosing.

The Dietetic Service, in cooperation with the management analyst and representatives from the Personnel Division, provides 10 hr. of classroom instruction in work simplification for the dietetic interns. This training program emphasizes human relations and includes discussion of the basic tools of work simplification.

Work simplification has been defined as the organized application of common sense to find better ways of doing work. It means eliminating the unnecessary parts of a job which add nothing to the value of the product. At Hines, the basic tools of work simplification taught to the dietetic interns are: problem solving, motion economy, and flow process charting.

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The systematic way to solve problems involves analyzing each of the following steps in turn:

(a) Determine the aim.
(b) Break down the job.
(c) Evaluate each step.
(d) Design the new job.
(e) Test the new plan.
(f) Try the new plan.
(g) Apply the new plan and follow up.

The size and scope of the aim determine whether all of these steps are needed.

The second tool, motion economy, includes these principles:

(a) Arrangement at the work place.
(b) Use of hands, arms, and other parts of the human body.
(c) Design of equipment and work aids.

These principles provide the common sense way of eliminating unnecessary motions. They are carefully considered in order to increase output with a minimum of fatigue.

The need for charting arises because we frequently do not see all the facts of a situation unless we use aids. The flow process chart is a device to record the activities of a worker, the processes to which a material is subjected, or a system of paper work. The work activities can be broken down into basic operations and carefully evaluated. Other charts and diagrams of work layouts aid in the proper distribution of the work load and more effective use of employees' skills. The training program for the interns stresses that no matter how efficiently a job is being done, there is usually a better method.

Projects for Practical Application

Following the classroom instruction, the dietetic interns undertake work simplification projects designed to increase efficiency and improve work methods. These provide an opportunity to observe work simplification in action and experience supervised application of the principles they were taught.

A variety of projects have been completed by the interns. In one project, an intern investigated the use of sugar substitutes in the hospital. Previously, sugar-substitute tablets had been served in small paper cups. This required the time of one employee to fill the cups before each meal, a time-consuming and wasteful practice. Also, too many tablets were frequently served in the cups. Furthermore, the cups were easily overturned on the trays. By purchasing prepackaged sugar substitutes as recommended by the intern, costs were cut and the efficiency in serving sugar substitutes was greatly increased.

Another dietetic intern revised an informal messenger service among clerks within the Dietetic Service. After surveys were made, the clerks were assigned scheduled trips to various units. The time saved averaged 14 min. per clerk per day.

Using a flow process chart as a work simplification tool, one dietetic intern accompanied an employee through his work routine for several days. She rescheduled his duties according to the facts she obtained, thereby increasing his efficiency.

In another project, a dietetic intern rearranged the modified diet menu to place related diets in a more logical order. This allowed the dietitian to prepare the daily modified diet menu more quickly with less chance of error.

The results of their projects have not always been dramatic, but work simplification is a continuing program. It does not end with the training and completion of one study. The dietetic interns have continued to apply their work simplification knowledge. They have developed an attitude of inquiry and are able to see their work in terms of motion economy.

This attitude of inquiry is shared by all members of the Dietetic Service who have had work simplification training. The entire organization benefits from this way of thinking, which is based on the concept that people are the most important factors in the success of any organization.

Work simplification training is adaptable to the needs of other hospitals and is recommended for inclusion in any dietetic internship program. The dietitians at Hines believe from their experience that continued promotion and support of work simplification will pay big dividends in improved operations and better service to patients.

The statements and conclusions are those of the author and do not necessarily reflect the opinions and policies of the Veterans Administration.

Filing Cycle Menus

SISTER JEANNETTE MARIE, S. C.

Director, Department of Nutrition
Good Samaritan Hospital
Cincinnati

DIETITIANS HAVE recognized that cycle menus cut down planning and purchasing time, but what about clerical time? When we first used cycle menus, a typist prepared ten mats a day for general selective and modified diets and order forms. A proof-reader inspected each one, and then the printer ran off each one on a different color of paper.

This seemed necessary because of the many adjustments we routinely made in our basic cycle menus. We wanted to present holiday fare, to meet religious fasting and abstinence regulations, and provide fresh foods in season.

Eventually, we decided we could save typing, proofreading, and printing time if we printed five times the daily requirement, use one-fifth of the

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Small set of shelves to keep daily supply of menus

Storage file for inventory of menus

supply, and store the others until the next cycle of twenty-one days came around. To meet the holiday problem, we ran special menus for that day alone. To meet religious requirements, as in Lent and on ember days, we ran a meat substitute at the noon meal, along with the other selective items.

Making the menu nomenclature stretch over seasonal variations was relatively easy. Instead of using particular names, as "fresh peach," we now say, "fresh fruit." Our dietary technicians offer further explanation, if asked, when they collect the menus from patients. We have found that few patients ask, "What kind of fruit?" Most people who choose fresh fruit seem to accept all kinds.

Storage of the supply of menus, of course, presented a problem. In a small hospital, they could be stored in folders in a metal file. With us, however, our supply would amount to 52,000 general menus (for twenty-one days) plus nine modified diets and forms multiplied by twenty-one.

We, therefore, designed a horizontal file, and a carpenter in the maintenance department built it for us. The sturdy shelves enable a clerk to keep in an orderly manner the supply of menus needed for three months. In the office, a small companion file cupboard makes available to our seventeen dietary technicians an adequate and convenient supply of menus for daily use. Each day, a clerk brings to the office the proper menus from the master cupboard, placing them on the file shelves according to the labels: "Today," "Tomorrow," and "Day after Tomorrow."

This new system allows a typist, who formerly spent most of her time on menus to spend only three weeks out of twelve on this job, leaving nine weeks free to assist with other typing, such as job analysis, work procedures, and recipe cards. A similar saving in time has been achieved for the proofreader and printer. The use of this cupboard paid for its construction cost in its first seasonal cycle.

Salad Dressing Preferences

Pouring-type of salad dressings are apparently becoming more popular with homemakers. Nine out of ten consulted in a recent survey reported that they used French dressing, and more than half used Italian dressing. Other pouring-types of dressings used included: cheese, slaw, Russian, and fruit. About three-fourths of the homemakers used mayonnaise and salad dressing, but there was a sharp decrease in the number who use only these products as they come from the jar. Counterbalancing this, there has been a decided increase in those who mix mayonnaise and salad dressing with other ingredients.

Interestingly, 88.2 per cent of these consumers reported saving all or some of the jars, and using them for the following purposes: a refrigerator jar, 52.7 per cent; canning fruits and vegetables, 47.9 per cent; packing pickles and preserves, 46 per cent; and food storage jar, 37.9 per cent.

The survey was done by Home Makers Guild of America for a large glass manufacturing company.

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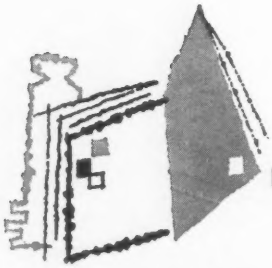


BOOK REVIEWS

Diet and Menu Guide. Chicago: American Hospital Association, 1961. Paper, spiral bound. Pp. 36. Price $2.50. (Available from The American Dietetic Association, 620 No. Michigan Avenue, Chicago; or American Hospital Association, 840 North Lake Shore Drive, Chicago)

This *Diet and Menu Guide* is the culmination of a project of the Joint Committee of the American Hospital Association and The American Dietetic Association. It will be welcomed by dietary consultants, shared dietitians, administrators, and physicians, who are ever alert for publications which will provide dietetic guidance for food service supervisors. It will be of particular value to the food service supervisor who directs the food service in a small hospital, nursing home, boarding home for the aged, or other similar institution.

The food service supervisor will find information on: nutrition as it relates to the normal diet; nutrients and their sources; principles that are basic in planning menus to provide for the nutritional needs of the body, as well as those which promote efficiency and economy in food production and service; and how to plan a normal diet, including modifications for low-calorie, fat-restricted, low-fiber, sodium-restricted, diabetic, and liquid diets, and tube feedings.

Menus for one week are included, with illustrations of how they may be modified to meet the requirements of the above therapeutic diets. It will not be difficult to adapt these menus to geographic food habits.

The food service supervisor who is interested in implementing the use of "cycle" menus and selective menus will find many helpful suggestions.—*Sallie J. Mooring, Project Director, A.D.A. Food Service Supervisors' Program, Chicago.*

Diabetic Care in Pictures. 3rd edition. By Helen Rosenthal and Joseph Rosenthal, M.D. Philadelphia: J. P. Lippincott Company, 1960. Pp. 237. Price $4.50.

This book is a perspicuous presentation of the treatment of the disease.

The utilization of "food constituents" is discussed in easy-to-understand language. Questions concerning signs, symptoms, heredity, obesity, and other factors seem to have been anticipated by the authors and are answered in a direct and concise manner.

Food—its breakdown and absorption—is dealt with in a section on "calories." This is followed by the Food Exchange lists and drawings, which help the reader in easy comprehension. Foods not found in the original Exchange list booklets, such as combination dishes, soups, are new in this revised edition. Also noted are new measurements (as equivalent to one exchange) of various food products. The diabetic diet and adjustments in low-sodium, bland, low-residue, and liquid diets are adequately covered.

Medical aspects are treated with clear explanations and pictures. Oral and parenteral administration, including the newer types of drugs, are particularly directed to the lay reader. The procedure for assembling insulin trays, actual injection of the insulin, and testing procedures for sugar and acetone are clearly defined and illustrated, and the important area of personal hygiene is thoroughly covered. A complete index and glossary, including Exchange lists, comprise the last section.

Although most of the drawings and photographs have remained unchanged in this edition, there are additions and improvements. These include subtitles for drawings, a variety of food products, their use in the diabetic diet, and a new method of urine sugar analysis with Tes-tape. The most practical and useful addition would seem to be the very complete "Table of Food Values." This will be gratefully appreciated by clinician and patient alike.—*Joan Marks, Nutritionist, University of Chicago Clinics.*

The Merck Manual of Diagnosis and Therapy. 10th edition. Edited by Charles E. Lyght, M.D. Rahway, New Jersey: Merck Sharpe & Dohme Research Laboratories, 1961. Cloth. Pp. 1907. Price $7.50.

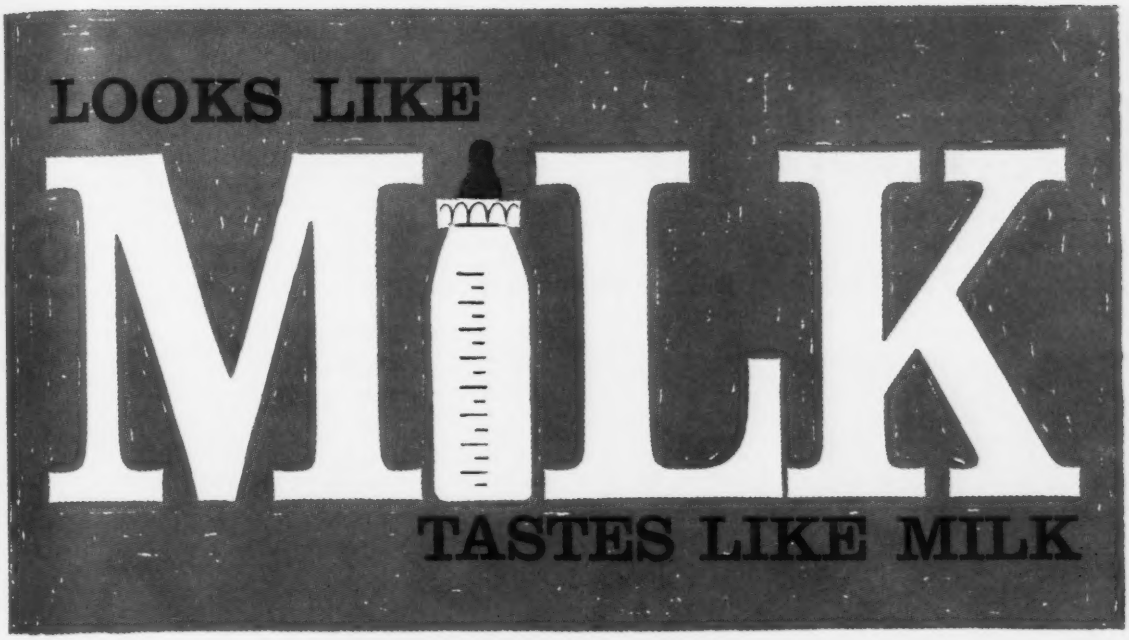
This tenth edition of this *Manual* is the latest in a series beginning more than sixty years ago. Going from the first small edition of 250 pages to the present one of 1907 in itself attests to the usefulness of the *Manual* to the medical profession.

In line with the avowed purpose of bringing up-to-the-minute facts to the physician, twenty-seven pages are devoted to tables and outlines of various dietary regimens. The descriptions of quantitative diets include the Exchange system for diabetic diets developed by The American Dietetic Association, American Diabetes Association, and the U. S. Public Health Service. In addition, adaptations of the Exchange system are indicated for the "low-salt" and low-calorie diets. A number of additional diets are also reviewed briefly.

While the medical rationale, dietetic principles, and evaluations of nutrient content of some of the diets are indicated, there are instances where questions will be raised by the professional dietitian. This is to be expected, of course, since much confusion results from the empiricisms which still exist in certain areas of diet therapy. As these areas are clarified, it is hoped that differences in terminology, inconsistencies in foods allowed and foods to be avoided, and dietary evaluations will be brought closer to those in use by the professional dietitian. This will insure better understanding and cooperation between medical and dietetic groups.

Betty Crocker's Outdoor Cookbook. New York: Golden Press (Published for General Mills), 1961. Paper, spiral bound. Pp. 176. Price $1.

Al fresco dining, a currently popular pastime of the American public, is the theme of this handy, inexpensive, and informal little cookbook. Naturally, "The Basics of Barbecuing" are dealt with first; and for the uninitiated or inexperienced, a list of tools is included. No matter what outdoor occasion or part of the country one cooks in, the second section of the book will provide appropriate hints. Adventures in backyard barbecuing, shore cooking (including a clam bake), cooking afloat, cruising on land, pack-trip cooking, and picnics are covered. Sample menus are illustrated, and tips on equipment and techniques are given. Actual recipes (over two hundred) make up the third section. Although these recipes are simple, they will take the outdoor chef out of a rut with ideas not only for the usual steaks, hamburgers, and chicken, but also for fish and shellfish, one-dish dinners such as tagliarini, roasted Bermuda onions and other vegetables, breads and pancakes, tasty salads, and desserts, such as island pineapple and camp-oven gingerbread.—*Margene A. Wagstaff, Elmhurst, Illinois.*



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1. Mosovich, Luis L., Pessin, Vivian and Lowe, Charles U.: Effects of Milk Composition on Baby Composition, AM. J. Dis. Child. 100: 791-792, 1960. 2. Adam, Doris J. D., Hansen, Arild E. and Wiese, Hilda F.: Essential Fatty Acids in Infant Nutrition, J. Nutrition 66: 555-564, 1958.

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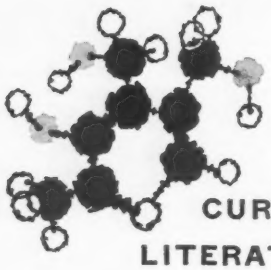

CURRENT LITERATURE

Contributed by Clara Karl Frederick, Lombard, Illinois; Margene A. Wagstaff, Elmhurst, Illinois; the following dietetic interns from the VA Center, Los Angeles: Karen Mund and Nadyne Rhinelander; the following dietetic interns from the VA Hospital, Houston: June Davis, Carol Hayes, Sally G. Kleber, and Lois Deon Lemons; the following dietetic interns from Charity Hospital, New Orleans: Sonia R. Bueno, Esperanza A. Callao, and Rosario V. Felarca; and the JOURNAL *staff.*

THE AMERICAN JOURNAL OF CLINICAL NUTRITION

Vol. 9, Part I, July-August, 1961

*On the etiology of the alcoholic neurologic diseases. With special reference to the role of nutrition. M. Victor and R. D. Adams.—p. 379.

*Effects of thiamine deficiency on the central nervous system. P. M. Dreyfus and M. Victor.—p. 414.

*Nitrogen balance as affected by neoplastic disease and its therapy. D. M. Watkin.—p. 446.

*A nutrition survey of the armed forces of Iran. J. H. Browe, J. S. Butts, J. B. Youmans, P. L. White, C. F. Consolazio, D. B. Hand, A. G. Peterson, L. M. Hursh, M. Tadayon, S. Deyhimi, R. Deyhimi, A. K. Afrakteh, C. E. French, and A. E. Schaefer.—p. 478.

Vol. 9, Part II, July-August, 1961

*The absorption of beta-carotene and its conversion into vitamin A. J. A. Olson.—p. 1.

*The inhibition of ascorbic acid synthesis by the process of lipid peroxidation in vitamin E deficiency. R. Caputto, P. B. McCay, and M. P. Carpenter.—p. 61.

Alcoholic Neurologic Diseases. The neurologic disorders of the alcoholic patient are considered with special reference to the causative role of alcohol, nutrition, and other factors. The results warrant the delineation of a large group of diseases known as delirium tremens and its variants, alcoholic epilepsy, and alcoholic auditory hallucinosis as being causally related to habituation and withdrawal from alcohol. These diseases are not of nutritional origin. In contrast, Wernicke's disease, alcoholic Korsakoff's psychosis, polyneuropathy, retrobulbar neuropathy, and the neurologic manifestations of pellagra are clearly nutritional diseases related to alcoholism only through the dietary irregularities to which it gives rise. It appears that one of the most frequent and serious sequelae of chronic alcoholism results simply from the substitution of alcoholic beverage for nutritious food. The pathogenesis of alcoholic cerebellar degeneration and other diseases have yet to be investigated, and their nutritional status remains uncertain.

Thiamine Deficiency and Central Nervous System. The clinical and pathologic features pertaining to the central nervous system of experimentally-induced thiamine deficiency in animals are reviewed. The lesions in various deficient animals were remarkably similar and also were strikingly similar to their human counterpart (Wernicke's disease). In all these species, the fundamental lesion in thiamine deprivation is a symmetrical focal pannecrosis affecting the nuclei of the brain stem and diencephalon. The occurrence of hemorrhages are probably a secondary phenomenon. The role of thiamine and its pyrophosphoric ester, cocarboxylase, in metabolism of the central nervous system is also summarized. Attention is drawn to the so-called "biochemical lesion" which antedates the deficiency symptoms. The total thiamine in different parts of the central nervous system in normal and deficient rats are presented. It is not known why certain selected portions of the brain are involved in thiamine-deficiency.

Nitrogen Balance and Neoplastic Disease. Normal subjects and those with chronic non-neoplastic diseases stored nitrogen when fed an adequate diet. Patients with active neoplastic disease showed nitrogen equilibrium, positive or negative nitrogen balance when studied under identical conditions. Examples of variations in nitrogen metabolism in patients with neoplastic disease are reported for four patients with chronic myelocytic leukemia. It was suggested that increased protein turnover may be an essential prelude to positive nitrogen balance; also, that high protein and caloric dietary intakes during an active phase of neoplastic disease when protein turnover is already high may merely increase energy and protein metabolism without inducing net nitrogen retention.

Nutrition Survey in Iran. A nutrition survey of typical units of the Imperial Iranian Army was conducted in 1956 by a joint Iranian-U.S. team sponsored by the Interdepartmental Committee on Nutrition for National Defense at the request of the Iranian government. In general, nutritional status of the troops was good. It was adequate with respect to calories, protein, iron, thiamine, and niacin. There was considerable area or location variation as regards riboflavin, vitamin A, and ascorbic acid nutriture. Considerable and impressive progress has been made in improving the feeding and nutrition of the troops since the original survey was conducted in 1956.

Beta-Carotene and Vitamin A. A diagram of a postulated pathway for the absorption of beta-carotene and its cleavage into vitamin A may be used to summarize this paper. Beta-carotene is absorbed from the intestine and is converted into vitamin A only in the presence of bile acids. It is likely that the bile salts act primarily by enhancing the absorption of beta-carotene rather than by stimulating beta-carotene cleavage.

Inhibition of Ascorbic Acid Synthesis. This paper reports on the inhibition of ascorbic acid synthesis by the process of lipid peroxidation in vitamin E deficiency. The mechanism of inhibition of gulonolactone oxidase appears to involve the reaction of either an intermediate formed in the enzymic conversion of gulonolactone to ascorbic acid or ascorbic acid itself with a lipid component to produce an inhibitor. The inhibitor or a by-product of its production eventually degrades to yield detectable amounts of malonaldehyde. The action of tocopherol (vitamin E) in this sequence would be to prevent the interaction of the postulated intermediate and some component of the tissue lipids.

AMERICAN JOURNAL OF GASTROENTEROLOGY

Vol. 36, July, 1961

*A controlled clinical evaluation of the appetite suppressant Benzphetamine, with and without the tranquilizer, Ectylurea. L. J. Cass and W. S. Frederik.—p. 82.

Appetite Suppressant and Tranquilizer. It has been reported that the appetite suppressant, Benzphetamine, stimulates the central nervous system. To avoid undue stimulation and yet retain the desired anorexic effect, a three-month study was done on seventy overweight persons. Two methods were used; (a) the initial administration of small amounts of the agent, 150 mg. daily, was given in conjunction with a tranquilizer, Ectylurea; and (b) a double-blind comparison of placebo tablets, Benzphetamine plus Ectylurea, and Benzphetamine alone. There were no dietary restrictions. Mood and blood pressure values were noted and remained unchanged. Appetite suppression and weight loss were noted from those who took the appetite suppressant alone and with the tranquilizer. It was concluded that simultaneous administration had no advantage over the use of the appetite suppressant alone and that the most effective way to obtain good appetite suppression with minimal side-effects was to start with small (25 to 50 mg.) midmorning doses of the drug and then change dosage as necessary to meet the individual's needs.

AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY

Vol. 82, July, 1961

*Evaluation of a new cobalt chelate with iron in pregnancy anemia. T. C. Christiansen, B. J. Koszewski, and M. E. Grier.—p. 213.

Copotein-Ferrous in Anemia of Pregnancy. The clinical use of copotein-ferrous, (the chelated cobalt iron complex) and ferrous sulphate were evaluated separately in fifty-three pregnant women ranging from age fifteen to forty-three years. Copotein-ferrous appeared to be more effective

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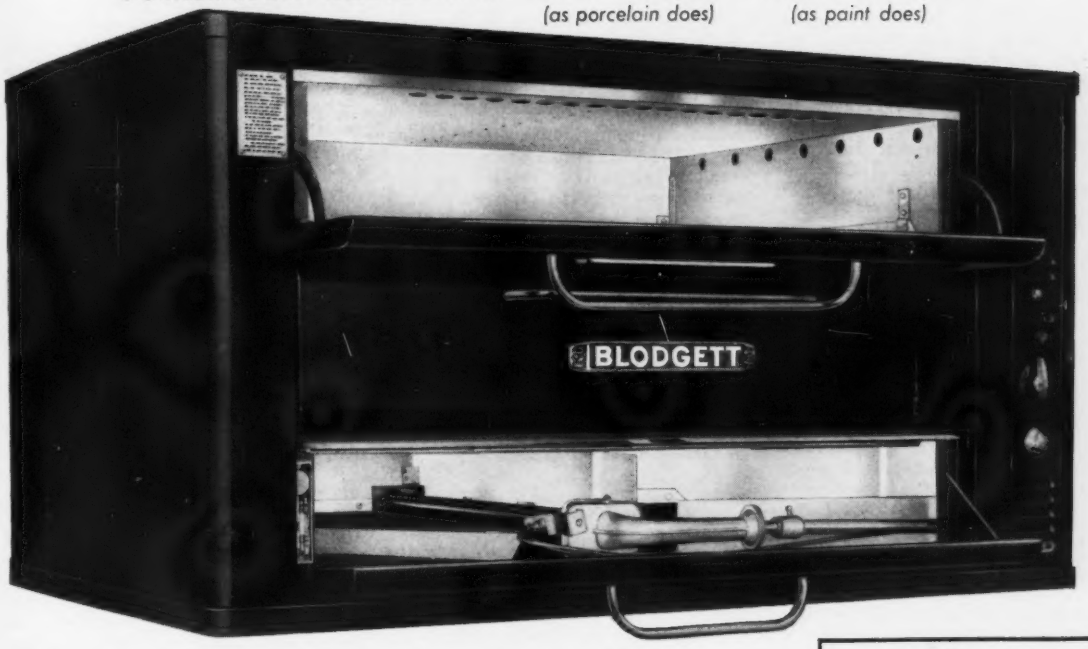

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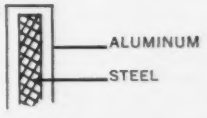

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AMERICAN JOURNAL OF PUBLIC HEALTH

Vol. 51, July, 1961

*Breast feeding practices: some implications of regional variations. W. O. Robertson. p. 1035.

Breast Feeding. Questionnaires on infant feeding practices were sent to 1500 mothers of young infants. Replies from 82 per cent of these mothers showed that incidence of breast-feeding was lowest in New England (16 per cent) and highest in the Mountain and Pacific states (44 per cent). A second and identical survey taken six months later gave comparable results. In addition to regional variations, differences in social class and maternal parity were significant. Variation in maternal age, urban or rural residence, and whether the infant was under the care of a pediatrician or general practitioner did not correlate with significant differences in incidence of breast-feeding at one week of age. Apparently, a complex of cultural factors rather than a particular personality pattern in the mother or the specific attitude of her attending physician is primary in her choice of feeding technique. Perhaps certain implications of a mother's decision "to nurse or not to nurse" need to be revised.

ANNALS OF BIOCHEMISTRY AND EXPERIMENTAL MEDICINE

Vol. 21, February, 1961

*The metabolism of nitrogen, calcium and phosphorus in children on a poor Indian diet based on bajra (*Pennisetum typhoideum*) P. P. Kurien, M. Swaminathan, and V. Subrahmanyan.—p. 41.

*Effect of medicinal calcium preparations upon iron utilization by experimental rats. D. B. Motlag and M. C. Nath.—p. 47.

Vol. 21, March, 1961

*Studies on basal metabolic rate and its variations amongst the people of Assam. Part II. B. Banerjee.—p. 75.

Metabolism Studies on Children in India. Bajra is widely consumed as a staple food grain by millions in India and is generally preferred to softer grains, such as rice. The metabolism of nitrogen, calcium, and phosphorus was studied in eight boys (eleven and twelve years old) on a bajra diet. All maintained a positive nitrogen balance. Nitrogen excretion in the feces was high, and the apparent digestibility of the proteins was only 52.9 per cent. All subjects were in positive calcium and phosphorus balance.

Calcium and Iron Utilization. Studies using rats indicate that calcium from different sources interferes with iron utilization. It was found that calcium preparations from pearl and coral had negligible inhibitory effect; conch shell, calcium carbonate, and calcium lactate had a more pronounced effect on iron utilization. The retarding action of calcium on hemoglobin regeneration is discussed.

Basal Metabolic Rate. The basal metabolic rate (B.M.R.) and serum protein-bound iodine (P.B.I.) estimations were made on two groups of women in Assam—one from the hills, one from the plains. There was no correlation between B.M.R. and P.B.I. values; there was correlation between P.B.I. and total serum protein in both groups.

CIRCULATION

Vol. 24, July, 1961

*Serum sodium and potassium in essential hypertension. B. E. Levine, J. M. Weller, and R. D. Remington.—p. 29.

Sodium and Potassium in Hypertension. This study was undertaken to determine if an association exists between blood pressure level and serum sodium or potassium concentration. All methods and measurements were standardized, and variables possibly influencing these factors were analyzed. Since increased salt intake has been postulated as an etiologic factor in essential hypertension, each patient was questioned in this regard. Fifty normotensive and forty-three hypertensive patients were studied. No significant associations were found between the height of the blood pressure, the serum sodium or potassium level, and the stated salt intake.

DIABETES

Vol. 10, July-August, 1961

*Inborn errors of carbohydrate metabolism. C. Y. Hsia.—p. 260.

Inborn Errors of Carbohydrate Metabolism. Four pathologic conditions are discussed which involve carbohydrate metabolism: (a) pathologic fructosuria, (b) galactosemia, (c) disturbances of glucose-6-phosphate dehydrogenase, and (d) glycogen storage diseases. Recently observed cases are described, and the conditions are discussed, not only in the light of proper differential diagnosis from diabetes mellitus, but also as models by which mechanisms of disease processes can be more clearly understood.

ENDOCRINOLOGY

Vol. 68, April, 1961

*Cortisol stimulation of glycogen synthesis in fasted rats. J. Ashmore, F. Stricker, W. C. Love, and G. Kilsheimer.—p. 599.

Vol. 68, June, 1961

*Effect of glucagon and epinephrine on regional metabolism of glucose, pyruvate, lactate, and citrate in normal conscious dogs. M D. H Henneman and W. C. Shoemaker.—p. 889.

Vol. 69, July, 1961

*Studies on the state of insulin in blood: The role of glucose in the *in vivo* dissociation of insulin complexes. H. N. Antoniades, K. Gundersen, and H. M. Pyle.—p. 163.

Cortisol Stimulation of Glycogen. Increased deposition of liver glycogen due to cortisol was studied in fasted rats, using labeled carbon. The results indicated that cortisol did not increase the hepatic glucose production. Evidence is presented that in the fasting adrenalectomized animal, there is some specific impairment in glycogen formation apart from the ability of the liver to form glucose. It is suggested that the adrenal cortical steroids may act to increase glycogen deposition from glucose.

Regional Carbohydrate Metabolism. Simultaneous arterio-venous concentration gradients and blood flow were measured in the liver and hindquarters following the administration of glucagon and epinephrine in postabsorptive, fasted, conscious dogs. In the postabsorptive dog, glucagon increased the production of glucose and the uptake of pyruvate, lactate, and citrate by the liver. Glucagon also increased the net production of lactate and citrate by the hindquarters; hindquarters uptake of pyruvate increased slightly. Hepatic blood flow increased and hind limb blood flow decreased after glucagon administration. The data indicate considerable recycling of the organic acids. Fasting depressed the effects of glucagon on regional glucose metabolism and regional blood flow but not on regional pyruvate, lactate, or citrate metabolism. Thus, the effects of glucagon on peripheral glucose uptake and blood flow appear to be related to changes in blood glucose levels while the effects of both hepatic and peripheral metabolism of the other compounds measured do not. In contrast to glucagon, epinephrine decreased hindquarter uptake of pyruvate and glucose. However, as with glucagon, small doses of epinephrine increased the net peripheral production of pyruvate and lactate; at the same time, it also increased their uptake by the liver. In general, epinephrine, like glucagon, affected the homeostatic balance between liver and peripheral tissues by increasing the hepatic glycogenolysis as well as accelerating the circulation of the components of the Cori cycle.

Glucose and Insulin Complexes. The ratio of "free" and "bound" forms of insulin in the sera of non-diabetic persons was examined both in the fasting state and following glucose administration. The predominant form of insulin in the sera of fasting subjects was in the "bound" form. Following intravenous administration of glucose, the "bound" form of insulin disappeared from circulation whereas in 10 to 20 min. after glucose administration, the "free" insulin increased markedly. These studies suggested that a rise of blood glucose in the non-diabetic person "triggers" a mechanism which results in the dissociation of the "bound" form of insulin in blood. Preliminary studies in untreated persons with diabetes are also presented and discussed.

FOOD AND NUTRITION NOTES AND REVIEWS

Vol. 18, March and April, 1961

*The next 100 years.—p. 17.

*The oldest canned food in the world? F. H. Banfield.—p. 21.

How B-V adds beef flavor and nourishment to menu items for only pennies per serving

WILSON'S B-V is the most versatile product ever created to help solve the many cost and flavor problems existing in the food service business. To our many users B-V is many things. It is the means of getting rich brown gravy time after time with or *without* meat juices, making ordinary items like hamburger, stew and meat loaf into a special tasty delight. And for a quick, energy builder, nothing compares with B-V "beef tea."

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Food for the Future. Following a review of the 150-year-old Malthusian theory (forecasting the future condition of mankind) and an assessment of food availability today, the following projection is made. Agricultural productivity will increase in underdeveloped countries as the techniques of fertilizer production and application, of plant improvement by breeding, and of pest control are applied. It will be necessary to expand the cultivated area into the soils of the wet cold regions and the rainy tropics. Assuming productivity characteristic of Europe today, within fifty years, four to five billion people could be fed a calorically adequate diet. With twice this level of productivity, in seventy-five to one hundred years, it would be possible to support between seven and eight billion people. Other future possibilities include decreasing the amount of food fed to animals, replacing less efficient crops by those more efficient, reclaiming ocean water for irrigation, and major changes in food production. Considered impractical are the cultivation of algae and chemical synthesis of food.

Oldest Canned Foods. In December, 1958, some historic tins of food were opened—roast veal dated 1823, roast mutton dated 1849, and Christmas pudding dated 1900. None contained any surviving microorganisms, but the food contained much more dissolved metals (from the cans) than would be acceptable. There was considerable breakdown of fat during storage. Animal feeding tests showed that the net protein utilization was very low, indicating over-cooking.

FOOD TECHNOLOGY

Vol. 15, July, 1961

*The Navy's food and equipment needs outlined by the U. S. Naval Supply Research and Development Facility. M. E. Ryberg.—p. 8.

*Control of microorganisms during preparation of vegetables for freezing. I. Green beans. D. F. Splittstoesser, W. P. Wettergreen, and C. S. Pederson.—p. 329.

*Control of microorganisms during preparation of vegetables for freezing. II. Peas and corn. D. F. Splittstoesser, W. P. Wettergreen, and C. S. Pederson.—p. 332.

*Quality of frozen vegetables purchased in selected retail markets. J. P. Sweeney, V. J. Chapman, M. E. Martin, and E. H. Dawson.—p. 341.

The Navy's Food and Equipment Needs. At the close of World War II, it was evident that the many feeding problems encountered by the U. S. Navy during the war were of sufficient importance to warrant a continuing research program. In 1949, the Naval Supply Research and Development Facility was established, which included a Commissary Research Division. In 1959, the name was changed to Food Science and Engineering Division, a title more descriptive of the nature of its work. There are four branches: equipment, food service, applied sciences, and applications engineering (responsible for galley and food service design and ship and shore establishment layouts). The duties of these branches are outlined, and problems concerning new foods, methods, and equipment are discussed.

Microorganisms in Freezing Green Beans. Methods of controlling microbial contamination of cut and French-style green beans during processing for freezing were studied. Chlorinated sprays reduced the number of microorganisms originating from conveyor belts. The practice of holding French-style beans in reserve resulted in significant growth of microorganisms. Also, growth of organisms was not adequately controlled on enclosed equipment, such as a filling machine. The need for improved sanitary design of equipment, more effective cleaning methods, and modifications in processing procedures is evident.

Contamination of Peas and Corn in Processing. Microbial contamination of peas and whole-kernel corn during processing for freezing was studied. Contaminated equipment surfaces were a major cause of high microbial counts. There is less of a problem with peas because the product is essentially intact, and there are few processing steps in the freezing procedure. The adhesive properties of corn juices presented special problems in the cleaning of processing equipment. The need for better methods of controlling contamination was discussed.

Frozen Vegetable Quality. An investigation was made of the quality of frozen green vegetables, both as received from the local retail market and after cooking. Brussels sprouts, broccoli spears, cut green beans, green peas, Fordhook Lima beans, and leaf spinach were studied. Ascorbic acid content and ratio of oxidized to reduced ascorbic acid varied considerably in all vegetables. Color was also variable among samples. Cooking accelerated ascorbic acid and chlorophyll changes that had begun in the uncooked vegetables. In the cooked vegetables, texture and flavor scores covered a wide range of the rating scale.

GERIATRICS

Vol. 16, July, 1961

*Management of hypercholesterolemia. W. Oaks, P. Lisan, and J. H. Moyer.—p. 343.

Vol. 16, August, 1961

*Dietary cholesterol and the pathogenesis of atherosclerosis. W. E. Connor.—p. 407.

Dietary Treatment of Hypercholesterolemia. Hypercholesterolemia appears to play a major role in the development of atherosclerosis; hence attempts should be instituted to return the cholesterol level to normal. Fat intake should be reduced from the usual 40 to 60 per cent of total calories to 20 to 25 per cent. Along with this, the ratio of unsaturated to saturated fats should be increased by the use of vegetable oils, in particular, corn oil. It was reported that the mortality rate falls when patients with previous myocardial infarctions are placed on low-fat diets.

Dietary Cholesterol. Generally, the idea that dietary cholesterol is an important factor in human atherosclerosis is refuted. In this paper, the role of dietary cholesterol in the pathogenesis of hypercholesteremia and atherosclerosis is reviewed. Evidence is derived from three sources: experimentally induced atherosclerosis in animals, epidemiologic studies in different populations, and metabolic studies in man (five separate studies carried on within the past three years are compared). It is concluded that diets used to treat or prevent human hypercholesteremia should be designed in terms of the cholesterol content as well as of the fat content.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 177, July 8, 1961

*Food allergy. Questions and Answers.—p. 91.

Vol. 177, July 15, 1961

*The professional spirit. L. W. Larson.—p. 97.

*Pressure-cooking. Questions and Answers.—p. 172.

Vol. 177, August 5, 1961

*Symposium on nutrition in tooth formation and dental caries. Introduction—factors controlling the incidence of dental caries. J. H. Shaw.—p. 304.

*Influence of nutrition and genetics on morphology and caries susceptibility. K. J. Paynter and R. M. Grainger.—p. 306.

*Chemical agents affecting experimental caries. I. Zipkin.—p. 310.

*Metabolism of fluorides. H. C. Hodge.—p. 313.

*Cariogenicity of foods. B. G. Bibby.—p. 316.

Food Allergy. Fatigue, often associated with lack of energy, initiative, and ambition due to allergy, especially to foods, has long been reported. Though other manifestations of food allergy, especially gastrointestinal allergy, allergic headache, and perennial nasal and bronchial allergy are usually present in these patients, fatigue alone may occur. Nervousness and other mental disturbances, including depression, confusion, and irritability, are often associated with allergic fatigue. In varying degrees and combination, these symptoms have been designated "allergic toxemia" when food allergy is suspected. The fallibility of skin testing and the usual failure of negative diet tests to reveal allergenic foods, as emphasized by many allergists, must be remembered. Trial diet with the standardized elimination diets, especially with the fruit-free elimination diet of Rowe, has revealed this allergic fatigue and toxemia in many patients.

The Professional Spirit. According to Dr. Larson, the new President of the A.M.A., in his inaugural address, the true professional spirit can help provide the criterion for meeting the countless baffling questions presented by modern life. "The professional spirit is made up of science and art, ethics and tradition. It includes compassion, sympathy, and understanding. Among its many ingredients are facts and philosophy, research and religion. This spirit is characterized by a thirst for knowledge and a striving for excellence — in both scientific

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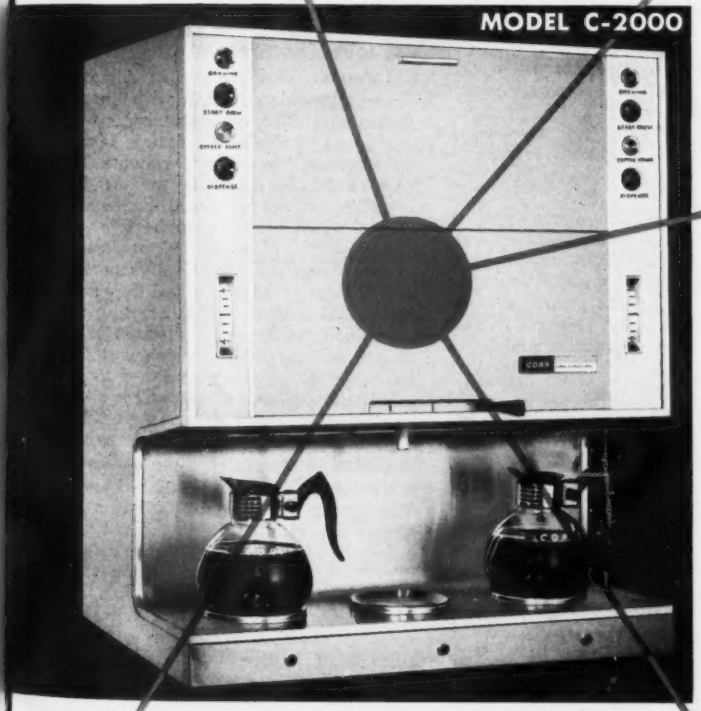

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PUSH-BUTTON AUTOMATIC . . . really automatic. Just push a button to brew. No waiting. No watching . . . it's automatic. Push another button and dispense perfect coffee every time.

JET SPEED . . . its b-r-o-a-d capacity lets you brew perfect coffee as fast as you need it. Brews 60 cups in less than 8 minutes . . . over 450 cups per hour. Dispenses full half-gallon in less than 10 seconds.

UNIFORM BREW . . . uses the exclusive, dependable *Upside-Down Brewing Method* proven in the CORY C-500. Automatic control of the brewing factors . . . makes each cup as good as the last.

Here now—the first/jet-speed/push-button automatic with b-r-o-a-d capacity . . . the new CORY *COFFEE CONTROL CENTER*. Designed to brew and serve perfect coffee, easier and faster . . . the new C-2000 is CORY-engineered to save you time, work and money too. Automatically brews 60 cups in less than 8 minutes . . . or over 450 cups per hour. You can brew as little or as much perfect coffee as you need. Two identical brewing systems give you an endless supply of perfect coffee plus greater serving flexibility. No guesswork, no waiting, no watching . . . the CORY *COFFEE CONTROL CENTER* is push-button simple and fully automatic. Its *Upside-Down Brewing Method*, perfected in the famous CORY C-500, gives you automatic, precise control of the vital brewing factors . . . and insures uniformly perfect coffee. Zesty, full-flavored coffee is kept at proper serving temperature in non-porous, taste-free stainless steel storage tanks or in taste-free glass decanters. Anyone can brew perfect coffee, quickly and easily, in the new CORY C-2000. It's the handsome . . . time/labor/money saving *COFFEE CONTROL CENTER* . . . backed and guaranteed by CORY, the greatest name in coffee brewing.

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Brew coffee in one and dispense from the other —or dispense from both. Brew 60 cups in less than 8 minutes . . . or over 450 cups per hour. Brew and serve more fresh coffee, faster.

COMPACT TOO . . . only 28" wide, 22½" deep, 36-1/16" high. Base is no bigger than CORY C-500. No wasted space.

EXTRA PLUS . . . instant hot water from center spigot at any time for hot tea, chocolate or bouillon.

EASY TO CLEAN . . . stainless cartridges and storage-tanks slide out and rinse clean in few minutes. Stainless steel cabinet wipes clean. No hour-long clean-ups, no muss or fuss. Cuts labor costs radically.

STAINLESS STEEL . . . cartridges, storage tanks and cabinet all are rugged, long-lasting stainless steel. Non-porous, stain-resistant . . . they won't dent, break, rust or chip.

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achievement and human relations. It impels respect for the individual, and recognition of the dignity of both life and death . . . and more than any other single element, this spirit involves the ideal of service and sacrifice—service to those who need medical help, and sacrifice of many personal comforts or desires."

Pressure-Cooking. There is no evidence indicating that pressure-cooking as opposed to other types of food processing would affect nutrients in food that are associated with bone development, namely, vitamins A, D, and ascorbic acid. Pressure-cooking has been shown to be the least damaging to most foods, and, in fact, pressure-cooking of vegetables results in high retention of ascorbic acid, the most easily damaged of the vitamins. Specific chemical reactions which in some manner would combine with calcium or specifically affect certain nutrients have not been reported.

Incidence of Dental Caries. Factors controlling tooth decay fall into two categories: those operating through the oral environment, and those through systemic pathways during tooth development. In the oral environment, oral microorganisms and carbohydrates retained on the tooth surfaces influence the incidence of dental caries. Saliva, the quantity and composition of which are controlled by systemic factors, is another major influence. Morphology of the tooth and its caries-susceptibility largely result from hereditary and nutritional circumstances during calcification and maturation.

Influence of Nutrition and Genetics. Size and shape of teeth are determined largely by inheritance, and shape of teeth is related to susceptibility to dental caries. For the majority of a modern urban population, fissures or pits on tooth surfaces will develop caries almost as soon as the tooth erupts. This means that many caries (the majority, in young children) may be impossible to prevent. Abnormal variation in tooth form in animals can be produced by altering the developmental environment of the teeth through nutrition. In human beings, larger teeth seem to be more susceptible to pit and fissure caries.

Effect of Chemical Agents. Caries-inhibiting agents include various fluorides, sodium lauroyl sarcosinate (SLS), lysine, various phosphates, penicillin, and tetracycline. Caries-potentiating agents include ethylenediamine tetra-acetic acid and dehydroacetic acid. Except for fluoride, trace elements are ineffective; vitamins also fall in this category. Specific tests on experimental animals, using the various chemicals, are cited.

Metabolism of Fluorides. Fluoride metabolism is described. Soluble fluorides are absorbed promptly and distributed rapidly throughout the body fluid. Only bone and calcified tissues serve as storage sites. The enamel surface of the tooth is a deposition site, presumably because of contact with fluoride-containing foods or water. Deposition takes place in enamel, dentine, or bone through an exchange with hydroxyl ions in the apatite crystals. Fluorides in the skeleton are not irreversibly deposited; there is a slow loss (from enamel partly by an exchange with hydroxyl ions, but mostly from adult bone by the slow process of haversian reworking).

Cariogenicity of Foods. Studies are cited which support the belief that carbohydrate foods are the principal causative agents of dental caries. Sugar in liquid form is less cariogenic than sugar contained in a carrier such as bread. The more frequently sugar is eaten between meals, the greater the increase in caries. Realizing that appetite, social customs, and commercial advertising thwart efforts to persuade children to give up between-meal snacks, an attempt must be made to find and substitute tasty foods of low cariogenicity or with protective properties. Recent data are included on the relative caries-producing potentials of common foods.

JOURNAL OF THE DIETETIC ASSOCIATION VICTORIA

Vol. 12, June, 1961

*Some characteristics of food selection in Singapore. J. Millis.—p. 4.

Food in Singapore. The population of Singapore is predominantly Chinese, but there are many Malayan, Indian, and other groups. Linguistic, and ethnic barriers influence social behavior and food choice. The island is self-supporting for eggs and poultry, pigs, green vegetables, and fish; staples and all other foods must be imported. Staple food of most of the population is rice, and soybean products are highly favored. The food preferences of each group are described in detail, and changes in food patterns during pregnancy and lactation are noted. Infant nutrition is reviewed.

JOURNAL OF FOOD SCIENCE (formerly Food Research)

Vol. 26, July-August, 1961

*Radioresistance of five strains of *Clostridium botulinum* in selected food products. E. Wheaton, G. B. Pratt, and J. M. Jackson.—p. 345.

*The fatty acids of vegetables. II. Spinach. L. R. Mattick and F. A. Lee.—p. 356.

*Dependency of almond preference on consumer category and type of experiment. G. A. Baker, M. A. Amerine, and D. E. Kester. —p. 377.

*Effects of ionizing radiations on plant tissues. V. Some effects of gamma radiation on lettuce leaves. L. M. Massey, Jr., D. F. Tallman, and Z. I. Kertesz.—p. 389.

*Factors affecting the water retention of beef. V. Variation of the zinc-containing enzymes. M. D. Berman.—p. 422.

*Studies on the ecology of selected food poisoning organisms in foods. I. Growth of *Staphylococcus aureus* in cream and a cream product. F. J. Post, A. H. Bliss, and W. B. O'Keefe.—p. 436.

*The carotenoids of navel oranges. A. L. Curl and G. F. Bailey.—p. 442.

Radioresistance of *Cl. botulinum*. Spore recovery counts made on five strains of *Clostridium botulinum* indicated striking differences in radioresistance. A difference was noted in the survival of spores in five food products (green beans, chicken, codfish, pork, and beef), with green beans providing the greatest destruction. Also, a given substrate allowed a greater percentage survival of one strain than another, so that two strains compared in one food do not always show the same relationship as when compared with another food. Some evidence indicates a modest recovery of viability of the irradiated spores during frozen storage prior to culturing. Since the character of the food determines in part the dose required for the destruction of *Cl. botulinum*, no single dose would be best for all food products.

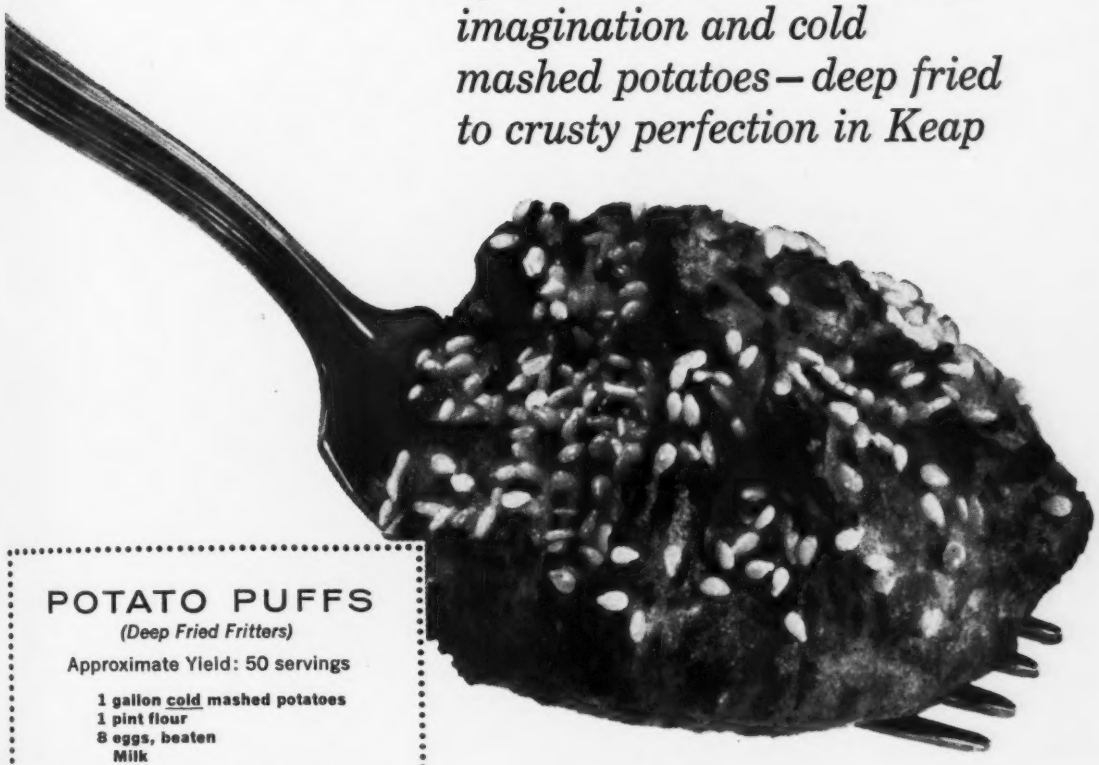
Fatty Acids of Spinach. The fatty acids in the extracted crude lipid of spinach were studied to determine changes during storage at −17.8°C. in the blanched and untreated condition. The total free fatty acids increased in the unblanched samples during storage. Palmitic acid increased during storage, whereas the longer-chain fatty acids, particularly linolenic acid, decreased. A fatty acid containing 17 carbon atoms was present in fair quantity.

Consumer Preferences in Almonds. Three almond selections with distinct tastes and other characteristics were compared by male and female tasters in different types of experiments. The tasters differed in preferences and in distributions of recorded degrees of liking. This study emphasizes the difference in direction of preference of consumers, and the large proportion of consumers who are indifferent to the test situation. It is interesting and important to note the distinct effect of sex on preference, which seems to be based on a shape difference that has little to do with taste. This study implies that there is no such thing as preference independent of qualifying conditions.

Radiation Effect on Lettuce Leaves. The effect of gamma radiation on lettuce was studied. Lettuce leaf tissue appeared more resistant to the softening effect of gamma radiation than the storage-type tissue of apples, carrots, or beets. The radiation-induced changes in the respiratory activity of lettuce were also studied. Although both oxygen consumption and carbon dioxide evolution were stimulated during irradiation, the response subsided to near-normal rates shortly after irradiation was stopped. There was some indication that the magnitude of the respiratory rate stimulation response was based primarily on dose rate. A comparison of softening and respiratory rate measurements indicated that the tissue softening was probably not direct-

You can make news with *potato puffs*

Spark sales with seasoning imagination and cold mashed potatoes—deep fried to crusty perfection in Keap



POTATO PUFFS

(Deep Fried Fritters)

Approximate Yield: 50 servings

1 gallon cold mashed potatoes
1 pint flour
8 eggs, beaten
Milk

Combine ingredients, adding milk (and salt) if needed. Spoon puff mixture into deep fryer at 375°. Fry about 2 minutes, until golden brown. Drain and keep warm on wire rack.

SPEED NOTE ON PROCEDURE:
Dip spoon into the hot Keap as you start and with each spoonful of potatoes. This prevents sticking. (Dipper or scoop may be used if desired.)

IRISH DELIGHT POTATO PUFFS
Add 1 cup finely chopped parsley and 1/2 cup finely chopped chives or green onion to puff mixture.

POTATO PUFFS DAUPHINE
Season potatoes with 1 tablespoon nutmeg.

DILLY POTATO PUFFS
Blend 2 tablespoons chopped fresh dill or 1 tablespoon dill weed into puff mixture.

GARDEN POTATO PUFFS
Add 1/4 cup grated onion and 2 1/2 tablespoons celery seed to puff mixture.

DELUXE SESAME POTATO PUFFS
Spoon above mixtures or your own variations into coating of sesame seeds combined with cracker crumbs.

Quik-Tips from Wesson for Extra Profits

- Tasty Potato Puff variations—with their golden-brown appetite appeal—can add distinction to your servings. It pays to make up potatoes for this specific use. And obviously, they're a perfect solution for leftovers.
- This fritter-style potato puff—with its fast spooning method—has been developed for speediest handling.
- Continuous volume frying is quick, profitable. Choose Keap, the "for frying only" shortening for high stability. Developed for potato chippers, Keap seldom if ever has to be changed if you filter frequently and replace about 20% daily.
- There's never a worry about flavor transfer with all-vegetable, perfectly bland Keap.

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ly related to the respiratory stimulation that occurred during gamma irradiation.

Water Retention of Beef. A comparative study of the zinc-containing enzymes (lactic dehydrogenase, glutamic dehydrogenase, carbonic anhydrase), zinc, water-soluble nitrogen, moisture, and protein content of six different muscles from three bovine animals was conducted in an investigation of factors contributing to differences in the ultimate *p*H values of the muscles. Variation was considerable in content of zinc, lactic dehydrogenase, glutamic dehydrogenase, and carbonic anhydrase. A highly significant direct correlation was found between *p*H and zinc content, and a highly significant inverse correlation between lactic dehydrogenase and *p*H. Lactic dehydrogenase significantly correlated with soluble nitrogen content. No relation was found between glutamic dehydrogenase, carbonic anhydrase, and *p*H.

***S. aureus* in Cream.** The growth of *S. aureus* in the presence of the normal flora of a pasteurized cream product was observed. A commercially produced whipped cream product, sold as a "cream puff" from unrefrigerated home delivery trucks, was studied. The need to provide refrigeration of cream and cream-filled products on trucks during the hot weather in Southern California was one of the basic considerations. Although over a million cream puffs had been sold in Southern California from these trucks, no report of food poisoning was recorded, or even a claim against the company of suspected food poisoning. The laboratory investigation did not explain why there have been no food poisoning cases reported from eating this product.

Carotenoids of Navel Oranges. The carotenoid mixtures of the peel and pulp of navel oranges were investigated. The composition of both is qualitatively much like those from Valencia oranges. About half of the total carotenoids in both pulp and peel consisted of violaxanthin and its 5,8-epoxide isomerization products. The peel carotenoids contained a fraction, possibly monol epoxides, in considerably greater quantity than found in Valencia orange or tangerine peel. This fraction included mono- and di-epoxides of cryptoxanthin and was the best source so far located for cryptoflavin-like carotenoid previously found in several other fruits. Neoxanthin and a trolliflor-like pigment were found in the pulp of navel oranges.

JOURNAL OF THE INDIAN MEDICAL ASSOCIATION

Vol. 36, June 16, 1961

*Kwashiorkor and marasmus in Calcutta. R. N. Chaudhuri, A. K. Bhattacharyya, and A. K. Basu.—p. 557.

*Kwashiorkor and marasmus. Editorial.—p. 584.

Kwashiorkor and Marasmus. Observations were made on 350 undernourished and malnourished children at the Calcutta School of Tropical Medicine during the past three years. Of the etiologic factors, defective feeding and infection were the most significant. Although most of the children were breast fed, poverty and ignorance resulted in poor intake of proteins and calories. There were two types of cases: the fatty type (kwashiorkor with and without dermatosis) and the wasted type (marasmus with emaciation but no edema and marasmic kwashiorkor with wasting and edema). Diarrhea and fever were the chief clinical features; wasting, dehydration, edema, and skin changes were present; hypoproteinemia was common to all; the liver showed extensive fatty changes in the fatty type, but hardly any in the wasted type. Nitrogen balance studies revealed impaired absorption only in cases with diarrhea and worm infestation. If not too far advanced, prognosis is good. In treatment, milk is the most effective form of diet, but vegetable protein preparations also give satisfactory results.

Kwashiorkor and Marasmus. The simple postulation of kwashiorkor as protein malnutrition and marasmus as caloric undernutrition is open to criticism. It appears that nutritional marasmus results from prolonged and gross dietetic inadequacy. Kwashiorkor, on the other hand, develops within a short period in a child subsisting on a border-line diet and failing to grow properly; the condition is commonly precipitated by an infection. These diseases are probably manifestations of the same disease process, and kwashiorkor may transform itself into marasmus.

THE JOURNAL OF NUTRITION

Vol. 74, July, 1961

*All-vegetable protein mixtures for human feeding. III. The development of INCAP vegetable mixture nine. R. Bressani, L. G. Elias, A. Aguirre, and N. S. Scrimshaw.—p. 201.

*All-vegetable protein mixtures for human feeding, IV. Biological testing of INCAP vegetable mixture nine in chicks. R. Bressani, A. Aguirre, L. G. Elias, R. Arroyave, R. Jarquin, and N. S. Scrimshaw.—p. 209.

*Variations in linoleic acid content of dietary fat in relation to metabolism of fat, nitrogen and minerals, and to changes in blood lipids. M. I. Irwin and H. F. Wiese.—p. 217.

*Some relationships between caloric restriction and body weight in the rat. I. Body composition, liver lipids and organ weights. M. Lee and S. P. Lucia.—p. 243.

Vegetable Protein Mixtures. This paper presents studies carried out in chicks and rats to test cottonseed flour as a substitute for sesame flour, and to determine the most nutritive combinations of corn and cottonseed flour in a mixture. Cottonseed flour efficiently replaced the sesame flour in Vegetable Mixture 8. Studies of corn and cottonseed flour combinations resulted in the designation of a new formula for potential human consumption called INCAP Vegetable Mixture 9.

INCAP Vegetable Mixture 9. A series of experiments carried out to test the nutritive value and lack of toxicity of INCAP Vegetable Mixture 9 are presented. The mixture contains in per cent: corn, 28; sorghum grain, 28; cottonseed flour, 38; Torula yeast, 3; and leaf meal, 3. Vegetable Mixture 9 is of high nutritional value and of potential value in human feeding. It was clearly shown that proper combination of vegetable proteins can yield mixtures of good quality and low cost.

Metabolic Effects of Linoleic Acid. Metabolic effects were studied in young men when the linoleic acid content was raised from 10 to 20 and 30 per cent of the dietary fat in a mixed diet in which fat provided 40 per cent of the calories. No significant effects of linoleic acid level were observed on the retention of calcium, magnesium, and phosphorus. The effect on nitrogen metabolism and fecal fat excretion was not clear cut. There was a downward trend in serum cholesterol and total fatty acid levels with increasing amounts of dietary linoleic acid, but the differences between the increments of linoleic acid were not significant. The proportion of di-enoic acid in the serum fatty acids increased significantly in all fractions studied as the linoleic acid content of the dietary fat increased.

Caloric Restriction and Body Composition. It has been confirmed that weight maintenance of rats by means of caloric restriction is accompanied by a gradual decline in caloric requirements. This caloric-restriction-adaptation was retained even after a period of severe caloric restriction accompanied by weight loss. Body composition, measured as the proportion of fat in the body and protein in the fat-free body were the same following caloric restriction as in the control animals. Some slight but significant changes were noted in body water. Liver total lipid, total cholesterol, and phospholipid levels were unaffected by caloric restriction. Although there were significant changes in liver weight, they did not follow any apparent pattern. Kidney and heart weights remained unchanged. The constancy of body composition suggests that the caloric-restriction-adaptation operates through some compensatory mechanism, such as alterations in total activity, or through metabolic pathways which influence the efficiency of energy yields from the diet.

THE LICENTIATE (India)

Vol. 11, May, 1961

*Studies on the deleterious effects of coffee & caffeine on health & disease. B. B. Dotto.—p. 53.

*Essential fatty acids. S. P. Roychowdhury.—p. 66.

*Diet in peptic ulcer. M. N. Habibi.—p. 72.

Deleterious Effects of Coffee and Caffeine. The validity of some of the statements made by this medical officer and consulting medical adviser to

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life insurance companies in India would seem questionable. He states that coffee is highly deleterious to health and longevity and gives a brief account of the incalculable harm caused by the consumption of coffee. He believes that caffeine has a stimulating effect on the central nervous system and other deleterious effects on blood pressure, tuberculosis, skin disorders, intestines, glaucoma, and other diseases. Caffeine may be classed as a narcotic, because it reduces the power to do accurate work, although at first it increases the speed of work. Dr. Dotto points out that caffeine is indispensable to physicians for its high therapeutic value, but that it should not be consumed for pleasure. However, de-caffeined coffee is harmless and fit for universal consumption.

Essential Fatty Acids. The composition of fatty acids is briefly discussed, in particular, the essential fatty acids (EFA). Consideration is given to the effects of EFA deficiency. Though there is no proof that deficiency of a particular type of EFA may lead to coronary heart disease, there is circumstantial evidence to show that a diet high in non-EFA and low in EFA causes high blood cholesterol levels with an increase in coronary heart disease. It is the ratio of EFA to non-EFA which is important. According to this author, out of 45 gm. minimum daily requirements of fat mixtures, EFA should constitute approximately 14 gm. Fatty acid content of a balanced diet in India is given. It appears that both linoleic and linolenic acids constitute about 17 gm. each in the daily diet—more than the minimum required.

Diet in Peptic Ulcer. In absence of a definite etiology, diet remains the primary source of relief to ulcer patients. In this article, a dietitian at Patna Medical College Hospital, Patna, India, gives the dietary schedule used for ulcer patients. During the acute phase, hourly feeding of milk and cream is given from 6 a.m. to 10 p.m., with intermediate doses of antacids. Then easily digested food materials, such as eggs and cereals, are included with the gradual addition of other bland foods to full bland diet.

NEW ENGLAND JOURNAL OF MEDICINE

Vol. 264, June 8, 1961

*Intestinal absorption—aspects of structure, function and disease of the small-intestine mucosa (continued). L. Laster and F. J. Ingelfinger.—p. 1192.

*Current concepts in therapy. Diuretics. R. V. Ford.—p. 1204.

Vol. 264, June 15, 1961

*Intestinal absorption—aspects of structure, function and disease of the small-intestine mucosa (concluded). L. Laster and F. J. Ingelfinger.—p. 1246.

Vol. 265, July 6, 1961

*Macroglobulinemia of Waldenström apparently associated with two paraproteins: Report of a case. H. T. Adelson.—p. 20.

Intestinal Absorption. The absorption of sugars, lipids, amino acids, and vitamin B_{12} across the small intestinal mucosa is discussed. The method used to study absorption *in vitro* is the everted-sac technique. Research data refute the phosphorylation theory as the means of transport during absorption of sugars. The exact reaction is not known, nor is the relation between fat absorption and the metabolism of fats within the intestinal mucosa. Changes in the structure of amino acids will change their rate of transport. The absorption of vitamin B_{12} and its relation to intrinsic factor are also presented.

Diuretic Therapy. Diuretics are increasingly popular, and their uses vary greatly. The author presents information on the use of diuretics in relation to toxicity, diet, hypertension, and potassium retention. A sodium-restricted diet allows the use of smaller amounts of diuretics and gives satisfactory blood pressure as well as an adequate potassium balance. Comments are also made on the administration of diuretics concurrently with other therapeutic agents, e.g., digitalis and steroids.

Intestinal Absorption. In primary malabsorption states, such as celiac disease, idiopathic steatorrhea, and tropical sprue, the small-bowel mucosa is extensively altered. In the lesion's severest form, the mucosal surface is almost completely flattened; and if villi are present, they are short and blunted. Abnormal cellular structure is demonstrated. Characteristically the duodeno-jejunal area is involved, but the incidence of ileal abnormalities is uncertain. The immediate pathogenesis and the underlying cause of the intestinal lesion are not understood. Nutritional deficiencies, particularly of folic acid, and exposure to toxic substances are suspected as causes. It is well known that gluten, a protein fraction of cereal grains, is injurious to most patients with celiac disease or idiopathic steatorrhea. Such patients suffer from a specific metabolic defect, perhaps lack of a digestive enzyme, that permits a toxic effect of wheat gluten on the mucosa. Work is being done to isolate the exact substance in the gliadin fraction of gluten that produces toxicity. An allergic reaction may be partially responsible for gluten intolerance.

Macroglobulinemia. This is a case report of macroglobulinemia. The clinical picture on admission to the hospital did not suggest the diagnosis of macroglobulinemia. Initially, the patient was treated for bacterial pneumonitis. Serum filter-paper electrophoresis showed what appeared to be two paraproteins in the gamma position. Evidence for the presence of two distinct abnormal macroglobulins was obtained by immuno-electrophoresis, utilizing rabbit antihuman globulin serum. The occurrence of more than one paraprotein has been reported by several authors. The various aspects of this disease are briefly reviewed.

NUTRITION

Vol. 15, Summer, 1961

*Reflections on human food patterns. W. R. Aykroyd.—p. 65.

*The metabolic changes following injury with special reference to diet. I. D. A. Johnston.—p. 70.

*A practical corn-oil diet. P. E. Torrens.—p. 82.

Human Food Patterns. Human food patterns should not be taken for granted. Like all forms of social behavior, they have highly complex roots. Some of the origins of human food patterns and the factors which determine and influence them are considered. Two important factors are custom and habits. There is also a close association between food and religion. Environmental, economic, social, and psychologic factors all underlie dietary practices. If the diet is to be improved, something about the existing consumption of food must be known, because that is the starting point for improvement.

Metabolic Changes Following Injury and Diet. Much is known about the alteration in metabolism following injury, and it has been shown that the changes are all directed toward the survival of the organism and the repair of the injured area. This is not true in disease. The metabolic balance technique has been mainly responsible for the study of postoperative metabolism. Alterations in protein metabolism form the major metabolic change after injury. These are discussed, as well as the changes in carbohydrate metabolism, sodium metabolism, potassium metabolism, and water metabolism. The need for vitamins, particularly for ascorbic acid, in the post-injury period is pointed out. The final section of this paper deals with the dietetic care of the surgical patient.

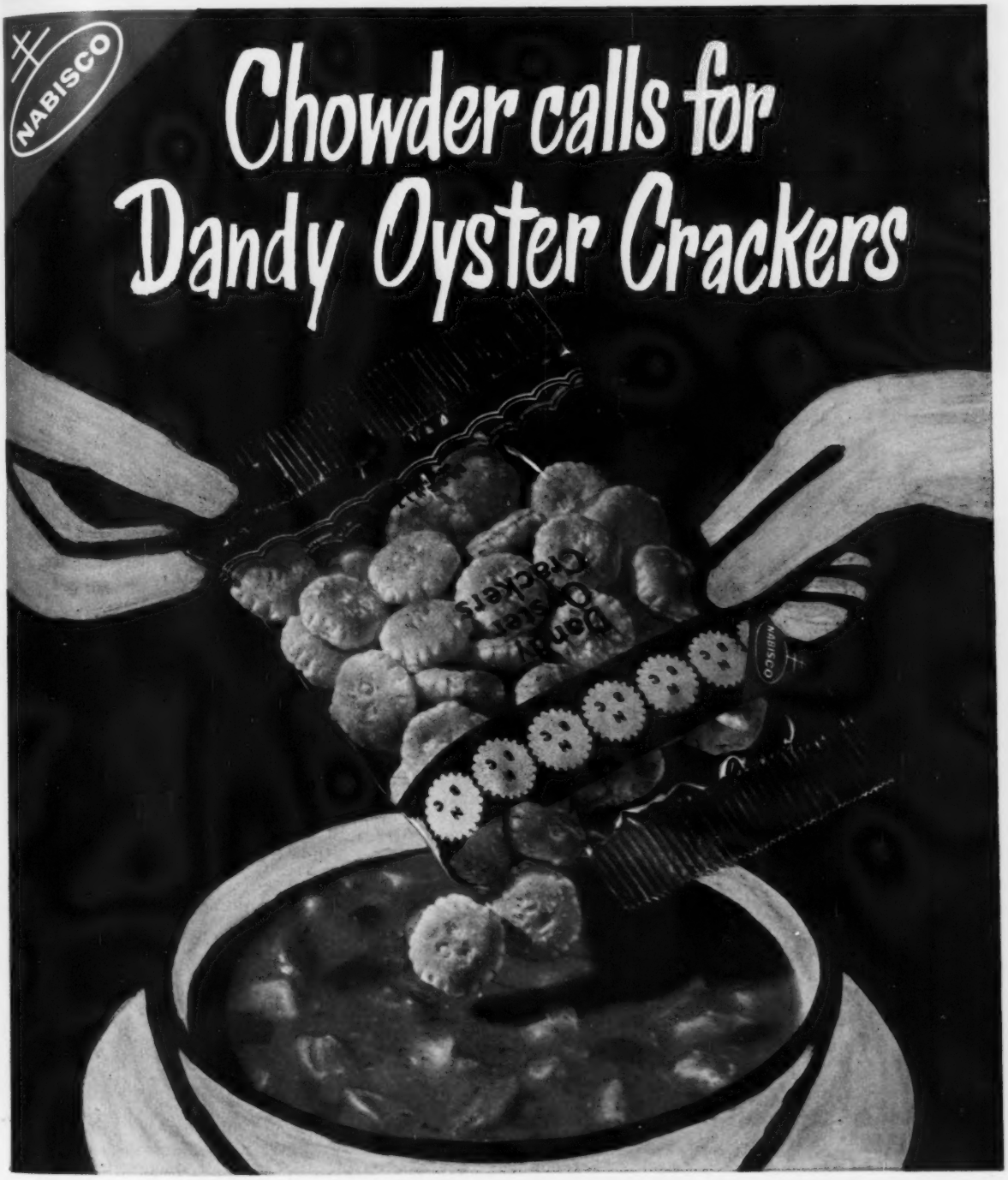
A Practical Corn Oil Diet. Serum cholesterol levels of eighteen patients with familial hypercholesterolemic xanthomatosis were studied during four-month periods on their normal diet and on a fat-free diet (approximately 10 gm.) plus 100 gm. corn oil daily. Lists of suitable and unsuitable foods are given. Comparative levels of serum cholesterol are shown for both diets. The fall in serum cholesterol levels during the four months on corn oil appears to be significant.

PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE

Vol. 107, June, 1961

*Effect of a necrogenic yeast diet on viral hepatitis (M.H.V.s) in mice. B. H. Ruebner and K. Miyai.—p. 437.

Yeast Diets and Viral Hepatitis. A Torula yeast diet, which is capable of producing dietary necrotic degeneration in mice, also increased susceptibility of these animals to experimental viral hepatitis. Alpha tocopherol and selenium prevented dietary necrosis and were also effective in reducing mortality of mice fed the



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necrogenic diet and suffering from experimental hepatitis. Very small amounts of selenium can often replace vitamin E as an essential nutrient. Although casein and yeast had a similar effect on mortality, casein was considerably more effective in stimulating growth than yeast supplemented with alpha tocopherol. This result confirms previous observations that the growth-promoting and anti-infective effects of protein are independent of one another.

SOUTH AFRICAN JOURNAL OF LABORATORY AND CLINICAL MEDICINE

Vol. 7, June, 1961

*The oxygen cost and work of breathing in normal and obese subjects. A. R. Bosman and H. I. Goldman.—p. 62.

Oxygen Cost and Work of Breathing. Methods are described by which both normal and obese subjects were studied in the work of breathing. Obese persons have an increased work of breathing and an increased cost of increased ventilation. The disproportionate rise in the oxygen consumption at low levels of ventilation could be due to increased work done on the lungs, increased work done on the chest wall, or a lowered efficiency of the respiratory muscles.

WHO CHRONICLE

Vol. 15, July, 1961

*The hazards of food additives.—p. 245.

Food Additives. A Joint FAO/WHO Expert Committee on Nutrition has defined food additives as "non-nutritive substances which are added intentionally to food, generally in small quantities, to improve its appearance, flavor, texture, or storage properties." Circumstances under which food additives may and cannot be justifiably used are listed. The safety of food additives is discussed at length; the decision whether to use a carcinogen as a food additive or to prevent it from being a contaminant must rest on an assessment of the risks and benefits it brings to the community and the individual consumer. FAO and WHO have prepared a data sheet on food colors. Others on antimicrobials, anti-oxidants, and emulsifiers are being drawn up.

AMERICAN RESTAURANT

Vol. 45, June 15, 1961

*Ideas—175 of them.—p. 34.

*Breading isn't bread crumbs.—p. 48.

Vol. 45, July 1, 1961

*Wine turns food into luxurious fare.—p. 14.

*Ice cream is hot this month!—p. 18.

*Thelma Greer spotlights kitchen schedules.—p. 31.

Vol. 45, July 15, 1961

*Good tips on salad making!—p. 24.

*Thirty-eight salad plate suggestions.—p. 26.

*Fruit salad suggestions.—p. 27.

*Ten top-award winning sandwiches.—p. 44.

*Training specialist cooks. G. L. Wenzel.—p. 50.

175 Ideas. From the programs and discussions at the 1961 National Restaurant convention come numerous suggestions applicable to food operations. Techniques of meat preparation, freezing bakery goods, customer comfort (lighting, temperature and sound control, seating, and so on), manpower utilization, promotion ideas, and the like are pointed up.

Breading Isn't Bread Crumbs. Breadings are manufactured and tailor-made for fried foods; they are ready-mixed (fully seasoned); moisture content is low and constant. Bread crumbs, on the other hand, are by-products of bread which must be ground and involve the use of a wash or batter dip before coating for good adherence; they will stale or become rancid; foods coated in advance will become soggy. The case for breadings is further substantiated in a table which includes data on particle size and structure, browning and sticking ability, fat absorption, texture and quality, and cost.

Wine Cookery. A four-course dinner featuring wine cookery is presented. It includes asparagus soup and a small glass of dry sherry; Coquille St. Jacques, a preparation of scallops and mushrooms served on individual sea shells and accompanied by a glass of chablis; a main course of fried chicken, brown rice, and creamed spinach, served with cabernet sauvignon; a frozen dessert accompanied by champagne; and café brulot. Recipes for eight servings are included.

Ice Cream Ideas. Cover the top of pie with a flat layer of ice cream instead of a ball. Serve coffee or hot chocolate with ice cream in the form of freezes or floats. Use appropriate dishes and silver in serving your creations. Use fruit garnishes. Offer a do-it-yourself sundae tray. Many combinations are suggested, along with several recipes and ice cream desserts for each month of the year.

Kitchen Schedules. Job assignments are listed for cooks and dessert and salad girls. Details are included on how much time is required for various tasks, relief schedules, how to cut vegetables for salads, and salad preparation.

Salad Making Tips. Cooked broccoli, raw cauliflower, inside leaves of spinach are useful salad ingredients. Fish or chicken salads with banana, ripe olives or grated walnuts in salad dressing, and candied fruit peels as garnish are among the newer tricks suggested. Quantity recipes are included for peach banana salad, Fulton steamboat salad (tuna and fruits), and molded cole slaw supreme.

Salad Plates. Among the thirty-eight salad plates suggested are those for summer, men's favorites, and cold plates appealing to women. All feature meat, fish, and poultry in various combinations.

Fruit Salads. Thirty-four apple salad ideas are listed; for bananas, eight variations are given; twelve or more ideas are presented for each of these fruits; grapefruit, oranges, and pineapple. Recipes are quoted for bleu cheese, French, roquefort, thousand island, and Russian salad dressings.

Winning Sandwiches. The recipes for the ten top sandwiches of 1961 are given, along with photographs of each. Included are the "Clam Dig," "Mardi Gras" (English muffins and crabmeat), "Beef Dauvergne," the "Gypsy" (oranges, salami, pickled beets, anchovies), "Glazed Gobbler," "Polynesian Luau," and "Peking Pig."

Training Specialist Cooks. Photographs supplement the equipment list and instructions for training cooks in making pies. Hints are included for rolling dough, fried pie dough, one- and two-crust pies, fruit pie filling, and pot pies and cobblers.

CANADIAN FOOD JOURNAL

Vol. 2, April, 1961

*The many faces of cheese. M. Mulliette.—p. 2.

*Questions and answers on cheese. E. C. Robertson.—p. 3.

*A concise guide to quantity food purchasing. L. H. Kotschevar.—p. 14.

*Milk—a long shelf-life and a happy one. E. S. Humbert.—p. 35.

*Once upon a tine. R. G. Davis.—p. 50.

Vol. 2, May, 1961

*How to improve hospital food service. J. G. Turner.—p. 14.

*Death at high noon. A. Francis.—p. 16.

*How industrial catering works. M. Mulliette.—p. 18.

*Age cannot wither. A. Francis.—p. 28.

*A concise guide to the selection of tableware. L. H. Kotschevar and M. Terrell.—p. 38.

*Look what ripe olives can do! I. M. Lucas.—p. 46.

Vol. 2, June, 1961

*Food comes first in the resort business. B. Frost.—p. 5.

*The passing of the pub. H. A. Albert.—p. 10.

*Good German cooking is *good*. J. Wechsberg.—p. 14.

*How to "sell" self-service. R. D. Reid.—p. 18.

*How to plan your dishwashing operation. L. H. Kotschevar and M. Terrell.—p. 22.

*A zest for mustard. M. Priestley.—p. 34.

*Solved: another riddle of the deep. A. Francis.—p. 36.

*There's prosperity in pizzas. B. Frost.—p. 40.

The man who invented Crepes Suzette. E. Lee.—p. 46.

Cheese. Cheddar is king of cheese in Canada and consumption is nearing that of the U. S., where the average is 8 lb. per capita per year. Serving suggestions may range from a cheese tray, to "nibbling" cheese with wine, to salad and vegetable accompaniment, to built-in flavor in desserts. Quantity recipes are included for Cheddar salad dressing, cottage style peppers, bleu cheese salad sherbet, petit Suisse, and lausagna. Cheese storage, characteristics, and grading are discussed. The many varieties manufactured in Canada (such as colby, montasio, bra, manteca burrino, and gouda) are described.

Cheese Quiz. Pertinent questions are posed and answered, covering the nutritive value of the many process cheeses, listing of low-calorie process cheeses, food value of cottage and cream cheeses, comparison of "natural" and process cheese, and food value of Cheddar cheese as compared

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with cheese spread. The calcium, riboflavin, protein, and calorie content of the more common cheeses (including the low-calorie cheeses) are listed in chart form.

Guide to Food Purchasing. The classic rules of food buying are reviewed with the admonition to buy the best quality for the use intended. The importance of specifications (tailored to the particular operation) is discussed. Canadian food grades are covered for beef; eggs; butter; cheese; fresh, processed, and frozen fruits and vegetables; honey, maple sirup; dry milk; and poultry.

Milk Sterilization. A recent advancement in the field of milk sterilization involves the principle of heating milk to ultra high temperatures (U.H.T.) ranging from 200° to 300°F. for very short times. Research at the University of Saskatchewan using the U.H.T. plate heat exchanger is presented. Problems of flavor, storage, and bottling are noted. However, it would seem that a sterile, concentrated milk can be developed for consumer acceptance.

History of the Fork. Just 500 years ago, a gold fork for eating mulberries was made for King Charles VII of France, setting a gastronomic landmark in the history of mankind (actually, a Saxon craftsman seems to have fashioned a fork of silver in Wiltshire in the year A.D. 800, but his secret was buried with him and not retrieved until 1000 years later). The civilizing influence of the fork spread from Italy in the fifteenth century and first became popular as a labor-saving device—to save washing napkins. The first forks were two-tined and superb craftsmanship was lavished on the handles. Wedding forks, portable (folding) forks, and fascinating historic incidents related to their use are told. The trend of contemporary designers is to a spoon-shaped fork (pictured along with several types of fifteenth and seventeenth century pieces).

Improving Hospital Food Service. Demands of today's culture require that the hospital dietitian practice good management policies. Furthermore, success in the profession depends on ability, intense desire, and good training. The ability to delegate authority is essential, as is training in the field of human relations, awareness of equipment needs, cost consciousness, and vigilance in customer reaction. The challenge of catering firms in hospital food service can be met only by development of the best possible management .

Shellfish Poisoning. Paralytic shellfish poisoning was first recognized as a public health problem in 1936, in Newfoundland. It has been established that poisonous shellfish are found also in certain areas along the lower St. Lawrence River and the Bay of Fundy. Commercial operations are now controlled and the suspected areas are checked, particularly from mid-July to September. Methods of determining toxicity are described. Activities of the Laboratory of Hygiene, Department of National Health and Welfare, in Canada are mentioned.

Industrial Catering. A national organization offers to clients complete service, from the initial survey and engineering procedures to the selection of personnel. While each operation is self-sustaining, menus are planned from company formulas (some four hundred in number) worked out in its test kitchens. The executive dietitian visits each operation annually. The food service facilities established at a Toronto insurance company office, are described (600 employees are served a full course lunch for 20 cents).

Storage of Apples. The Food Processing and Storage Division of the Federal Department of Agriculture in Ottawa has been doing research on the storage of apples. The fruit "hibernates" in an atmosphere containing 30 per cent oxygen and 5 per cent carbon dioxide (slowing down respiration and retarding the onslaughts of age). Loss of moisture is prevented by "jacketed storage," a system likened to a huge crisper. Further tests have shown the inadequacies of wooden boxes for packing (they absorb a high proportion of the moisture in the storage unit). Saturating the boxes may solve the problem. Extending research in other areas, it has been found that refrigerated trucks are not adequately refrigerated for torrid summers. The implications for transportation of frozen foods are apparent—and "jacketed" trucks provide an answer.

Tableware Selection Guide. Choice of tableware is determined by satisfaction for specific use, appearance, durability, and cost. Information is given for stainless steel and silver plate flatware, for china, glass, and plastics. A guide to quantity of these items needed in various situations is included.

Ripe Olives. The only fruit apart from the avocado that contains oil, the ripe olive, is available whole, pitted, chopped, and sliced. The large plum-sized fruit is impressive as a relish (when serving, it is best to drain and roll in a few drops of olive oil to keep shiny). The olive as a cooking ingredient is worth considering, as in cream of tomato and other cream soups. Interesting combinations are suggested and recipes with ripe olives are given for tamale casserole, stuffed bun palos verdes, cheese-olive stuffed tomatoes, and spaghetti sauce.

Resort Food. "Concentrate on food first, accommodation second, and attractions third" is the advice of one resort owner. One proof of value for money is the offer of second helpings. After an eating spree, appetites level off, but the spirit of personal contentment lingers on. A basic three-point program for a resort food department involves careful long-term planning, comparison and early-season purchasing, and original serving ideas (an Indian Feast is featured here). Also discussed are transient guests, a snack shop, and extending the season (particularly with convention and sales meetings groups).

Passing of the Pub. There are now fewer than 70,000 inns and pubs in Britain. One hostelry in every four has closed. Social change has constantly hit at the English inn, but never with such a double blow as the threat of television and the spread of the coffee-bar habit. On the other hand, social change has been a gusty cyclone, sweeping away clutter and leaving the true inn more hospitable than ever before. Some of the most successful inns and their gastronomic delights are described.

Good German Cooking. In the best German restaurants, the food has a French rather than a Teutonic flavor. One of the finest of eating places is the Gasthof zum Adler in Bad Godesberg, the decor, history, and cuisine of which are depicted. Favorite German dishes are highlighted, including asparagus, sauerbraten, thick pea soup with pigs' ears, sausages, hams, wines, and many other specialties.

Self-Service Lunchroom. One of the most advanced self-service staff restaurants in Canada serves 1100 workers of the Bank of Montreal. Planning began four years ago, when service was carte blanche. Seating capacity is 295, with lunch breaks scheduled at 15-min. intervals over a 2-hr. period. The counter is designed on the "open shopping" principle. In the kitchen, raw materials are stored near the point of preparation. Diners deliver their own trays to the dishwashing room; they are placed on a traveling belt, disappear into the L-shaped room, and are emptied at four stations for sorting. Background music played even in the dishroom adds to the pleasant atmosphere.

Planning a Dishwashing Operation. In no other area is planning more important to labor economy and high standards. Routing or flow is one of the first steps to be considered—creating the least confusion, noise, and unsightliness. Information is presented on dividing glasses and silver from soiled dishes, equipment, techniques for washing each type of item, layout (including space allowances), and pot and pan washing.

Mustard. Man's passion for mustard dates back to ancient Greece; today, the world consumption of mustard flour exceeds 200,000 tons. Incidents of its popularity with popes, kings, and the common people are brought to light. The mustard seed contains two substances, sinigrin and myrosin. When mixed with water, the myrosin acts as a ferment on the sinigrin, splitting it into a volatile oil of mustard containing potassium, salt, and sugar (the reaction does not occur when *boiling* water is used—only *cold*). The volatile qualities, saffron color, and flavor diminish after about 10 min. Prepared mustards with a

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■ Choose from two attractive designs... the "Tulip Design" or the "Green Leaf Design." Both are available in complete matching place settings for all-around ease, economy and harmony of service. For information, write to: Lily Tulip Cup Corp., Dept. JD 1061, 122 E. 42nd St., N.Y. 17.

relatively stable compound of vinegar, salt, and spices, on the other hand, may improve on keeping up to eighteen months. There is no longer profit in reaping brown mustard by hand. Breeders have produced a new mustard, Trowse, which retains its seed in the pod and produces a yield 50 per cent higher than brown mustard. The mustard crisis has passed!

The Salmon Riddle. Oceanographers of the U.S., Canada, and Japan have, over the past ten years, carried on research which throws light on the problem of dwindling salmon supplies. Most sockeyes born in the tributaries of the Skeena and Fraser Rivers swim out 2000 mi. into the Pacific, well east of the 175th meridian. They find their way back to their native river at spawning time, navigating by the stars; the sense of smell guides them to the self-same pool in which they were spawned. Scientists have isolated the hormone which triggers the maturing process—part of the knowledge which may save the dwindling supply. Slaughter by larger fish, over-fishing, and other problems of the salmon population are discussed, along with corrective measures.

Prosperity in Pizza. This Italian food is low in production cost and high in profit. The success secrets of one restaurant operator are told. Facts are given on equipment costs, preparation methods (recipe and shaping of dough, basic filling, cooking), production costs, retail prices, and take-out service.

COLLEGE AND UNIVERSITY BUSINESS

Vol. 31, July, 1961

*We serve two million meals a year. W. N. Davis.—p. 49.

Food Service Philosophy. Sharpe Refectory at Brown University, Providence, R. I., serves student meals family style. The philosophy behind this service is that mealtime for the student should be a pleasant, dignified, refined social occasion. Providing waiter service is difficult, but considered worth the effort. A local linen supplier outfits the student workers. Three meals daily, seven days a week, are served to 2200 students as part of the room and board plan. A three-meal cafeteria service for graduate and off-campus students is also provided. Information is given on kitchen facilities and staff, and considerable discussion is devoted to linen supply and service.

DRIVE-IN MANAGEMENT

Vol. 20, July, 1961

*Ad techniques for single-unit operators. T. Carlon.—p. 21.

*Standardization is key to food cost control. L. H. Kotschevar.—p. 26.

Ad Techniques. Planned advertising should bring at least a 10 per cent increase in sales in a three- to six-month period, or it isn't worth while. For a single-unit operation, television advertising is too expensive and often wasteful. Planning involves finding an "exclusive" which will catch public attention. Billboards, radio, and newspaper hints are given.

Food Costs. Five areas which must be considered in achieving good food cost control are: (a) menus, (b) purchasing, (c) production, (d) service and (e) finances or accounting. Aspects of each are examined.

FOOD ENGINEERING

Vol. 33, July, 1961

*Sets specs for handling frozens.—p. 36.

*Develop new flavor ingredient. E. K. Heaton and J. G. Woodroof.—p. 42.

Handling Frozen Foods. Voluntary standards of practice in handling frozen foods have been spelled out by Frozen Foods All-Industry Coordinating Committee. Covered are recommendations for the processor, for warehousing, for transportation equipment, for route delivery, for retail storage facilities, for display cases, and retail handling.

New Flavor Ingredient. A new product, "pecan butter," is a highly satisfactory additive for confections, milk shakes, ice cream, dessert sauces, prepared cake mixes, and baked goods. It is rated as one of the highest known sources of unsaturated natural oils. Though it costs more than peanut butter, when used to extend its flavor into other products, the amount required is about one-fourth that of peanut butter. Composition and manufacture are other bits of information included.

FOOD AND EQUIPMENT MANUAL

Vol. 13, July-August, 1961

*Food buyers guide.—p. 27.

Buyers Guide. The new food processing methods, freeze-drying and dehydrofreezing are described. Sources of information on purchasing are pointed out, particularly publications of the USDA. Hints are included, too, on how to know what to buy and where to buy.

FROSTED FOOD FIELD

Vol. 32, June, 1961

*EFFA speakers see freeze-drying, dehydrofreezing playing limited role.—p. 9.

Vol. 33, July, 1961

*They are eating frozen dinners—but what are they watching?—p. 13.

*New equipment is cutting the costs on freeze-drying.—p. 14.

*The microbiology of frozen foods: II. R. P. Elliott and H. D. Michener.—p. 16.

*The case for dehydrofreezing.—p. 18.

*Irradiation preservation: present outlook.—p. 23.

*Clouds form on institutional scene.—p. 50.

Freeze-Drying and Dehydrofreezing. These two processes have a number of inherent disadvantages that make it extremely unlikely that they will ever pose a threat to frozen foods, according to reports given at a recent meeting of the Eastern Frosted Foods Association. Freeze-drying is expensive and slow, and to date, the quality of products processed by this method is questionable. Dehydrofreezing has the disadvantages of requiring zero storage and care in reconstitution (which takes considerable time). Dehydrofreezing, it is predicted, will be limited almost entirely to the institutional field. Freeze-drying has a future in production of ingredients intended as components (for instance, freeze-dried chicken for inclusion in freeze-dried chicken soup).

TV Dinners. Surveys have measured the popularity of precooked, frozen dinners. Among daytime shows, "Championship Bridge" was watched by 924,000 families who were eating frozen dinners at the time (50 per cent of the audience). Whetting the appetite during nighttime viewing were "Eyewitness to History" (31 per cent or 1,346,000 indulged in frozen dinners) and "Twilight Zone". The largest group of families serving these dinners were in the $6,000 to $9,999 income bracket. A number of demographic characteristics can be determined in this type of survey.

Freeze-Drying. Advantages and difficulties of the freeze-drying technique are cited. A typical installation is pictured; processing costs are reviewed. Storage, shipping, and packaging information is given also.

Microbiology of Frozen Foods. Data are presented to indicate that microbial growth commonly occurs in frozen foods at temperatures above 20°F., and occasionally down to 14° or possibly 10°F. The typical bacterial growth curve is illustrated.

Dehydrofreezing. In dehydrofreezing, the food is dehydrated until 50 per cent or more of the moisture is evaporated and then it is frozen and kept in zero storage. The process is not to be confused with freeze-drying, where the food is frozen first and then dehydrated almost completely under high vacuum. Advantages of dehydrofreezing are enumerated (particularly those of weight and cost savings), equipment is described, and products suitable to the method are considered (such as peas, apples, baby foods, bakery goods, frozen dinners, and pimiento cheese).

Irradiation Preservation. Ionizing radiation can be applied to sprout inhibition (as in potatoes and onions), reinfestation (such as insects in grain and trichinae in pork), pasteurization, and enzyme deactivation. Technical terms defined are *rep* (equivalent to the absorption of 83 ergs of energy per gram of material) and *rad* (equivalent to the absorption of 100 ergs of energy per gram of material). Ranges and sources of radiation are described, cost estimates are given, advantages and disadvantages in various foods are described, vitamin losses are analyzed, and Army evaluation tests are discussed.

Frozen Food and Volume Feeding. Institutional opinion on the new frozen convenience foods was reported recently in the *Wall Street Journal.* One disquieting note was the problem of poor quality; another involved the high price of prepared entrées. The in-

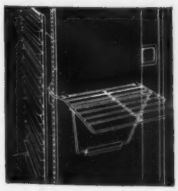
continuous *air recirculation**

holds all compartment temperatures at proper serving level

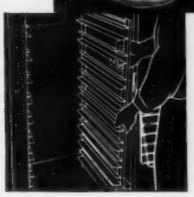
Two fans gently and constantly recirculate hot and cold air around filled trays even while the cart is being moved to the patient floor.

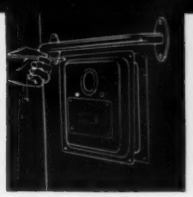
While in transit, special rechargeable batteries operate two fans inside the cart. This continuous air recirculation prevents the hot and cold air from forming stagnate pockets. Door operated switches automatically shut fans off while trays are being assembled.

Designed to carry 20 hot and 20 cold trays, Southern's new *DIET-TRAY* Cart is preheated and precooled by electricity in the kitchen for approximately 30 minutes before the food is placed in the cart. During this preconditioning period, the special batteries are being recharged.

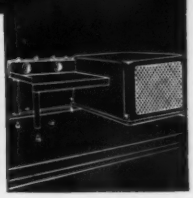

Plastisol coated tray shelves have door-locking feature when in service position.

Floor personnel assemble complete tray at convenient working height.


One-piece tray slides lift out to allow thorough compartment cleaning.


Entire power unit removes for repair or replacement.

Removable panel with special rechargeable batteries and thermostatic controls.


For easier maintenance—compressor compartment housing and coffee shelf lift off as a single unit.

See this new cart in operation in St. Louis

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dustry must educate its market to the fact that labor and many other costs are "built into" frozen prepared products and a lower mark-up should be taken in pricing menus for customers.

HOSPITAL MANAGEMENT

Vol. 92, July, 1961

*Introducing methods improvement. A. M. Hicks.—p. 6.

*Defrosting times of frozen turkeys. L. Moragne and K. Longrée.—p. 64.

Vol. 92, August, 1961

*Your inventory records can keep you out of trouble. Sister M. Brigid.—p. 50.

Methods Improvement. A methods improvement program was carried out at Pekin (Illinois) Public Hospital, starting with a film and brief orientation of all employees. This was followed by the committee approach (the committee made up of employees from the section being studied). Accomplishments have been of three types: (a) the direct project accomplishment (for example, saving 1 mi. of unnecessary walking a week for a dietary aide who prepared afternoon nourishments); (b) sampling (to find out how personnel spend their time); and (c) employee awareness of the program and its results and benefits.

Defrosting Frozen Turkeys. Defrosting turkeys at room temperature is often the method used when time is pressing and refrigerator space is limited. Research was carried on to determine if this is a safe procedure. Defrosting in the refrigerator took three to four times as long as defrosting at room temperature. In general, the areas just below the skin defrosted first. Regardless of the conditions of defrosting, the temperatures in the cavity of the carcass remained below 40°F. (giblets left in the cavity obstructed passage of warm air). However, the skin of the turkeys defrosted at room temperature remained over 40°F. for 11 hr., and over 50°F. for 4 hr., encouraging growth of Salmonellae and Staphylococci. The practice of thoroughly washing turkeys prior to cooking is excellent from the bacteriologic viewpoint.

Inventory Records. Given here is the first section of a food and item inventory list. Commencing with "Alimentary Pastes" (noodles, macaroni, and so on) it goes on to "Baby Foods," "Baking Supplies," "Beverages," "Canned Goods," and "Cereals," ending with "Confections, Candy, Nuts, etc." The list will be continued in another issue.

HOSPITALS

Vol. 35, July 16, 1961

*Area-wide planning of hospitals and related health facilities. G. Bugbee.—p. 17.

*Demonstration cart teaches nutrition. Opinions and Ideas.—p. 27.

*Adapting dietary facilities to progressive patient care. J. Erwin.—p. 77.

Area-Wide Planning for Hospitals. The report described here was prepared by a joint committee of the American Hospital Association and the Public Health Service, in order to develop and present additional guidelines for planning urban hospitals. Twelve planning principles are set forth, pertaining to the organization and function of a planning agency. The committee also delved into the kinds of data required to plan intelligently. Furthermore, broad principles for developing a regional plan are included. The role of the local planning agency in implementing a regional plan is also suggested.

Nutrition Demonstration Cart. The therapeutic dietitian at Crawford W. Long Memorial Hospital (Atlanta) designed a cart to carry visual aids for dietary instruction, including dietetic foods and food models. The hospital auxiliary provided the $250 needed. A hospital carpenter built the cart (plywood, 20 in. wide, 36 in. long, 48 in. high, mounted on 6-in. wheels) which can be squeezed into narrow spaces between beds. On either side desk-type openings provide table-like surfaces for display purposes. The cart serves as a conversation piece and stimulates questions leading to individualized patient instruction.

Progressive Patient Care. For two years, progressive patient care has been in effect at Grant Hospital in Chicago. Three elements comprise the system: intensive care (18 beds), intermediate care (226 beds), and ambulatory or self-care (16 beds). In the planning stage is a fourth unit—continuing or long-term care. The dietary department has adapted itself to this program by using existing dietary services in the intensive and intermediate care units and by providing cafeteria service in the self-care unit. Operating methods are described with particular emphasis on the self-care unit cafeteria. Here, one of the features is the availability of food 24 hr. a day (a refrigerator is stocked with between-meal snacks). The cafeteria system is a means of patient instruction in food selection (a dietitian goes over menu possibilities with those on modified diets the day before and is present at meal time).

INPLANT FOOD MANAGEMENT

Vol. 8, July, 1961

*Aerojet-General modernizes for 10-fold customer boost.—p. 22.

*Vending and inplant feeding.—p. 30.

*Anticipating equipment needs of the future.—p. 32.

*Can you tell right from wrong in labor relations?—p. 42.

*Food subsidy: Small cost big value.—p. 60.

Vol. 8, August, 1961

*First class planning pays off for Oregon bank.—p. 31.

Better Plant Lunch Program. In 1960, only 4 per cent of the 2500 employees of Aerojet-General Corporation, Downey, California, participated in a lunch program. A remarkable change has resulted from complete cafeteria modernization (layout and list of equipment suppliers are included), improvement of mobile food service (the food trains are described), and a motorized "surrey with the fringe on top" (idea borrowed from Disneyland) making trips between the cafeteria and all outlying areas of the plant. Over 40 per cent of all employees now participate in the program.

Vending and Inplant Feeding. Possibilities for vending complete meals have just begun. However, the food manufacturers must come through with new processes before such a program can be realistic. Food packages for vending do not have eye appeal, and manufacturers are a long way from producing hot foods in containers other than tin cans. Successful vending in a plant requires a minimum of 250 employees as potential customers. Industrial workers are more conscious of cost than office workers. Breakfasts offer new opportunities for vending.

Equipment Needs of the Future. Members of the International Society of Food Service Consultants indicated at their spring meeting that space- and labor-saving equipment for converting and dispensing instant coffee must be developed. New mobile food equipment, particularly for hospitals, features devices for locking both the axis and wheels so that no unit wobbles when in use. A decision was made to have this International Society act as a clearing agency for researching new equipment. When need for a new product arises, the Society will decide which manufacturer should work with the members in designing it. Any royalties accruing from the sale of these products will be turned over to leading universities, such as Cornell and Michigan State, for scholarships.

Labor-Management Difficulties. These day-to-day situations, as handled by management, are among those described: (a) Is failure to "take care of his job" a good reason for letting an employee go? (b) Can you fire a woman worker for using unlady-like language? (c) Should an employee be fired if he gets in a serious brawl in a saloon? (d) Can you introduce automation, even if it means that senior employees will lose their jobs?

Food Subsidy. Subsidized food service frequently becomes a target for the cost-cutting axe in employee benefit programs. A formula for comparing value and cost is given, not on the basis of total annual dollars but in terms of per employee working hour. The contribution of the program to employee health, morale, and productivity is stressed.

Employee Cafeteria. A new food service layout was proposed and the architecture of a new building adapted to this layout, in the attractive employee cafeteria of the First National Bank of Oregon (Portland). The kitchen and dining area cover about 10,000 sq. ft., and service is available each day from 9 a.m. until 4 p.m. for 500 employees (seating space accommodates 160 persons). Although food prices have increased by about 5 per cent, servings per day have increased about 80 per cent. Merchandising policies and kitchen design are described.

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With Niblets®, you get the young crisp taste of just-picked, just-packed roasting ears . . . the juicy, sun-fed flavor of corn on the cob—without the cob! Niblets kernels are full and sweet, with summer sunshine in every bite. They're quick-cooked in just 8 minutes to capture the color and taste of fresh country corn; then vacuum packed in a minimum of liquid to keep every kernel crisp and flavorful.

You'll also find a new pack of Kounty Kist® whole kernel corn at your Green Giant distributor's. It's quick-cooked and vacuum packed just like Niblets, only with a little more texture.

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Principal items of equipment are listed (by manufacturer).

INSTITUTIONS

Vol. 49, August, 1961

*Space and manpower requirements in colleges.—p. 2.
*Venture into vending.—p. 10.
*Requirements of a chef. G. W. Oddoux.—p. 74.
*Fresh ways to serve fresh vegetables. Part II.—p. 76.
*Food service manager's guide to quick service.—p. 119.
*New convenience in coffee brewing.—p. 127.

College Layout. This compilation of data comes from members of the National Association of College and University Food Services. Average number of meals per week are listed for breakfast, lunch, and supper. Snack bar, fountain, and banquet service is also indicated. The average size of dining area is noted, kitchen space allocation is outlined, and manpower requirements for receiving and storage, bakery, cooking, service and bussing, dishroom, and the like are given.

Vending. Expanding food service volume can be accomplished by reorientating an existing kitchen for automatic food service. Steps are set forth for planning a commissary for vending. A successful menu pattern is included. Space for receiving, raw food storage, preparation, production, packaging, finished food storage, and shipping is required for optimal commissary operation. Business-building assistance for vending operators is available through major food companies and the School of Hotel Administration at Cornell University.

Requirements of a Chef. An executive chef must realize his responsibilities toward management, toward his staff, and toward himself. Furthermore, he must love his trade (and be an artist); he must be efficient; and he must be trained to meet all the qualifications of the job—from cooking to food control to management.

Fresh Vegetables. Baked beans with cranberry sauce; casseroles such as one containing onions, turnips, peppers, fresh corn, and peas; and attractive vegetable plates are featured. Ideas are given also for carrots with grenadine; celery Victor; baked squash with grenadine, orange juice and sherry; stuffed vegetables; and yams Cointreau. Quantity recipes are included for beets with orange sauce, stuffed cabbage à la Turque, and over twenty-five other unusual vegetable dishes.

Quick Service. All day, from short order breakfasters, through coffee breakers, early lunchers, afternoon tea takers, early and late diners, and late evening snackers, quick service installations are volume builders. Installations are described for hospitals, private schools and seminaries, dairies, and drug stores. Equipment is photographed and suggested, layout and space are considered, as are merchandising techniques and cleaning and maintenance of equipment.

Coffee Brewing. The latest advances in coffee brewing equipment make poor coffee inexcusable. Improved welding techniques have practically eliminated leaks and burnouts. Another improvement is the complete insulation of units. New equipment is low in height to eliminate the use of chairs, ladders, or stools. Automatic brewing, streamlined and simplified units, self-service designs, dispensers for soluble coffee, and water purifiers are among other improvements. Urn maintenance is considered.

MANAGEMENT METHODS

Vol. 2, July, 1961

*How to make yourself more creative. E. Roudsepp.—p. 20.

Developing Creativity. You don't have to be born with the creative problem-solving ability. Through disciplined practice, you can acquire it. To increase your creative power, follow these key steps: (a) Stretch your horizons by reading not only in your field, but in other areas, exchanging ideas with others, cultivating hobbies, and traveling. (b) Cultivate your field through reading and studying to develop a deep understanding of the basic principles of the field. (c) Pinpoint the problem and analyze it. (d) Hunt for ideas that will help you solve a specific problem. (e) Boost your enthusiasm by developing techniques which increase the creative drive. (f) Prepare for the premiere by anticipating objections and preparing variants of your ideas.

THE MODERN HOSPITAL

Vol. 97, July, 1961

*How to plan menus that please patients. C. E. Beyer, M. E. Ericson, and J. J. Wanderstock.—p. 108.
*Kitchen should be clean enough to welcome visitors or inspectors. J. Hartman.—p. 114.

Patient-Pleasing Menus. Acceptability by a patient of a given meal depends on such factors as climate and weather, food habits, occupation, age and sex, and variety. Good meal planning is affected by avoidance of repetition, stress on color and shape, consistency and texture, variety in preparation methods, and appreciation of tradition (not to be confused with routine). Menu components, from appetizer to dessert, are described. Concise notes on "how to write the menu" and "how to check for acceptability" are also outlined.

Clean Enough for Visitors. Many hospital kitchens do not come up to par when it comes to aseptic standards. Local inspection by sanitarians of the community can help (particularly when local problems of purity of water and milk supplies develop). Adequate refrigeration, vermin control, and care of food storage rooms are highlighted.

NRA NEWS

Vol. 4, June, 1961

*The wine list. A. G. Seaberg.—p. 34.

Recognize this "breakfast grump?"

... Even "grumps" warm up to double-flavored

Malt-o-Meal

Put a smile on that "grump's" face. Plan his menu to include Malt-o-Meal. A pleasant change from bland diet boredom. Malt-o-Meal has FLAVOR. Double flavor! The nut-sweet flavor of sun-ripened wheat plus toasted malt. Never gummy, has a good "mouth feel." Just what the doctor ordered for bland diet "grumps." Downright good eating for young and old. So good, it even smells delicious.

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- Easily digestible.
- Fortified with B complex vitamins and iron.
- Free of non-nutritional additives.
- Added wheat gluten gives higher protein content.

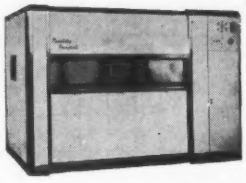
When ordering cereal . . . order Malt-o-Meal enriched wheat cereal.
(Meets Federal specifications for enriched wheat cereal.)

How's this for name dropping?

It's not bragging, exactly, but we've noticed people are interested in the company they are keeping. We can't begin to list here the tens of thousands of **Middleby-Marshall** oven installations in every conceivable kind of concern where food is prepared in quantity, but we'll just drop a few names we bet you'll recognize. **We hasten to add,** lest anyone's feelings be hurt, that there are lots more but we **just mixed up a lot of names** of our users and told the printer to keep going until he ran off the bottom of the page.

The list must begin with **your baker,** and **chances are,** statistically about 7 to 10 that his oven is M-M. Next, add the **armed forces** and all branches of the **Federal Gov't** having to do with food preparation—**V.A., Dept. of Justice, Dept. of Agriculture,** etc., and the ratio is, we estimate, about **8 to 10 that the oven was made by us** (not counting small deck or cabinet ovens which we don't make). Add **hospitals and prisons of most states.** Taking up from there, here are a few names of other clients, some of them having many dozens of our ovens:

Continental Baking Company, General Motors, Campbell Soup, Sears Roebuck, Curtis-Wright, A & P, Ford Motors, Armour, International Harvester, F. W. Woolworth, United Airlines, Standard Oil, Marshall Fields, Allis-Chalmers, Notre Dame University, Boy Scouts of America, Swift & Company, IBM, The Greenbrier, Prudential Insurance, Atomic Energy Commission, Texas Instruments Company, Annapolis Naval Academy, General Baking Company, Oscar Mayer, Sky Chefs.



Holloway House Frozen Foods and Restaurants, U.C.L.A., Anaconda Copper Company, Hughes Aircraft, Gulf Oil, A.C. Spark Plug, Eden Roc Hotel, University of North Carolina, University of South Carolina, Hot Shoppes, B. F. Goodrich, Firestone Rubber, Piggly-Wiggly, Walgreen Drug Stores, Ebinger Baking Company, John R. Thompson, Walter Reed Hospital, Ward Baking Company, Howard Johnson's, Dixie Cup, General Foods (Birdseye), Hilton Hotels, Sheraton Hotels, Kirkeby Hotels, White Castle, New York Foundling Hospital, University of Connecticut, Villanova, Super-Value, Douglas Aircraft, Gimbel's Fred Harvey, Oklahoma A & M, Brown & Bigelow, Goldblatt Brothers, Endicott-Johnson Shoes, Brach Candy, Sperry-Phoenix, Carson Pirie Scott, Montgomery Ward, University of Maine, Hough Bakeries, Western Electric, General Mills, New Mexico State University, William & Mary, J. J. Newberry, Northwestern Mutual Life Insurance, Diplomat Hotel, Public Schools Systems of Chattanooga, Omaha, St. Louis, Los Angeles, Chicago and others, Bishop-Heath Industries, Hudson's Bay Company, Saxony Hotel, many Convents, Seminaries and other religious institutions.

International Milling, Henrici's, New York Thruway Restaurants, Durkee Foods, U of Virginia, Luby's Cafeterias, Grand Union, O. P. Skaggs System, Webb's City, Inc., Edgewater Beach, Colorado State College, S. S.

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The Wine List. The wine list becomes an inferred testimonial that the cuisine is better than average; wine is the drink *par excellence* to go with food; and there is profit in wine. The categories to be included in a wine list are outlined. Charts offer information on Bordeaux, Burgundy, Rhine, and Moselle wines, and champagne. Instructions are included on phonetic pronunciations for wines. A wine-food chart makes up another part of this informative article.

NURSING OUTLOOK

Vol. 9, July, 1961

*When instructors use recordings. M. D. Jacobson.—p. 437.

Instructors Use Recordings. Listening to oneself teach, and planning for constructive evaluation from another individual can improve teaching techniques. Dictaphone recordings were unsatisfactory in one sense since they lacked stimulation from a student group. On the other hand, they did attract attention to certain undesirable voice characteristics and revealed such things as quality of content and organization, the need for improvement in sentence construction and pronunciation, unnecessary repetition, and crowding of too much interrelated material into one lecture period. A tape recording in a regular classroom situation is valuable in evaluating projection of oneself.

PERSONNEL JOURNAL

Vol. 40, July-August, 1961

*Standardized absence rates: a first step toward comparability. H. G. Heneman, Jr., C. Comaford, J. Jasmin, and R. J. Nelson.—p. 114.

*So, you'd like to be a woman boss? G. Gracey.—p. 119.

Standardized Absence Rates. The study of absence rates could lead to answering such questions as: Is absenteeism a function of morale? Which industries and geographic locations exhibit the highest degree of absenteeism? What are the correlates of absenteeism and what are the best methods of reducing it? A formula for computing absence rates is presented and the term, "absence", is carefully defined with clarifying statements.

Woman Boss. Women, on the whole, find working for another woman more or less intolerable. The underlying reason is that one woman cannot exploit another woman the way she can almost always exploit a man. The woman boss, in order to "hold onto" her position over species of the same sex, must be blessed with the soul of an angel, the patience of Job, the wisdom of Solomon, and have vinegar instead of blood in her veins. She must have courage, ingenuity, skill, decisiveness, astuteness, initiative, and self-control. Is it worth all this?

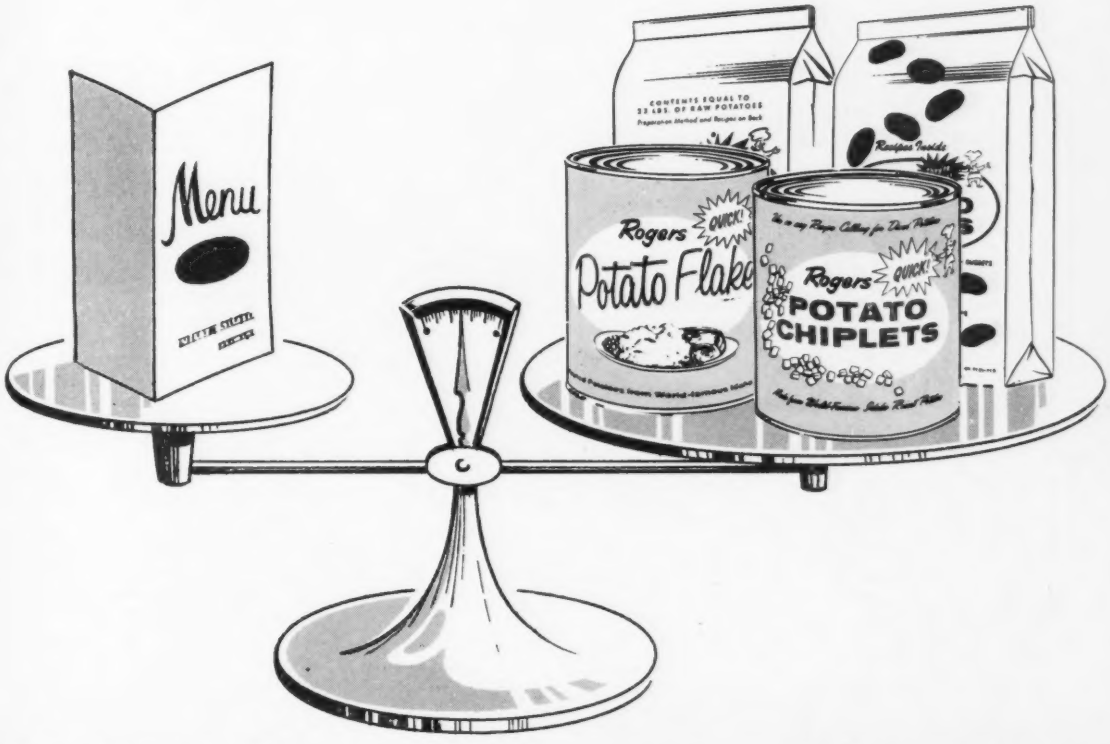
PROFESSIONAL NURSING HOME

Vol. 3, July, 1961

*Supper—is it a bugaboo? J. Hartman and M. Zickefoose.—p. 16.

REPORT FROM
ROGERS

A Balanced Menu Needs Rogers Quick Potatoes



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Write for your free copy of Rogers recently published Technical Bulletin, which discusses potatoes, potato products, and their comparative nutritive values. No obligation.

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Omaha, Nebraska

Supper Menu. A supper menu for older persons should include a main dish, a vegetable, bread and butter, a simple dessert, and milk. Casserole ideas, candy treats, fruit muffins, and picnics are just some of the ways in which supper can be a meal of anticipation.

RESTAURANT MANAGEMENT

Vol. 89, July, 1961

*Food service clinic. N. Kirikos.—p. 47.

*Sandwiches around the clock. A. Easton.—p. 55.

*Trouble shooting the restaurant. T. Elliott.—p. 62.

Kitchen Department Layouts. Good layouts are synonymous with good traffic patterns. Two departments are depicted here—the dessert and "garde manger." In a small restaurant, the two departments can be combined. Three sections are evident: storage of unprepared foods, work preparation area, and a means of serving to the waiters. Here, pass-through refrigerators are "musts."

Sandwiches. Sandwiches have often been considered a nuisance menu item, but changing meal patterns in the U.S. are placing them in the spotlight. A do-it-yourself sandwich station is described. Coffee-break sandwiches, open-faced sandwiches, salad-sandwich combinations for afternoon snacks, and dinner sandwiches are some of the features suggested in this article.

Management Sense. Management knowledge and skills are tested in a quiz of ten multiple-choice questions. Answers are given on another page. Such phases of management as cost control, menu planning, training, personnel needs, and competition are included.

VOLUME FEEDING MANAGEMENT

Vol. 17, July, 1961

*Volume feeding trends. A. N. Wecksler.—p. 17.

*The four-minute meal.—p. 21.

*Peaches . . . ideas, ideas, ideas.—p. 27.

*Sandwiches . . . bread, filling & imagination. E. Blair.—p. 30.

*Melons . . . buy smart, serve often.—p. 34.

*What's new with dishwashing?—p. 38.

*The standardized restaurant. O. Webber.—p. 51.

*Product evaluation report: food display cases.—p. 57.

Vol. 17, August, 1961

*Food quality control comes first. V. Putsch.—p. 24.

*Personnel control helps reduce turnover. E. Allen.—p. 26.

*Purchasing from planned menu. R. L. Keeney.—p. 28.

*Controlled accounting checks the controls. D. E. Duggan.—p. 29.

Trends. A bill has been introduced in Congress calling for a higher minimum wage coverage for hotels and restaurants . . . Certain "cold-loving" bacteria which spoil pre-cured luncheon meats multiply faster in the refrigerator than at ordinary room temperatures — freezing stops their growth . . . A basic recipe for fresh fruit concentrates to use in drinks and desserts, is given . . . New information is available from the USDA in "Tips on Selecting Fruits and Vegetables" . . . A typical employee cafeteria makes more profit on a cup of coffee than on any other beverage sold (net margin of 3.8 cents) . . . Leftover eggs should be covered, refrigerated, and used within a short time; egg yolks keep best covered with a small amount of water and used within three days; whites can be stored up to ten days.

Four-Minute Meal. A new franchise catering operation uses two pieces of equipment—an automatic rotary fryer and a microwave oven—and serves a limited menu. The principle works on off-premise eating. The "package deal," including financial arrangements, and operation are described.

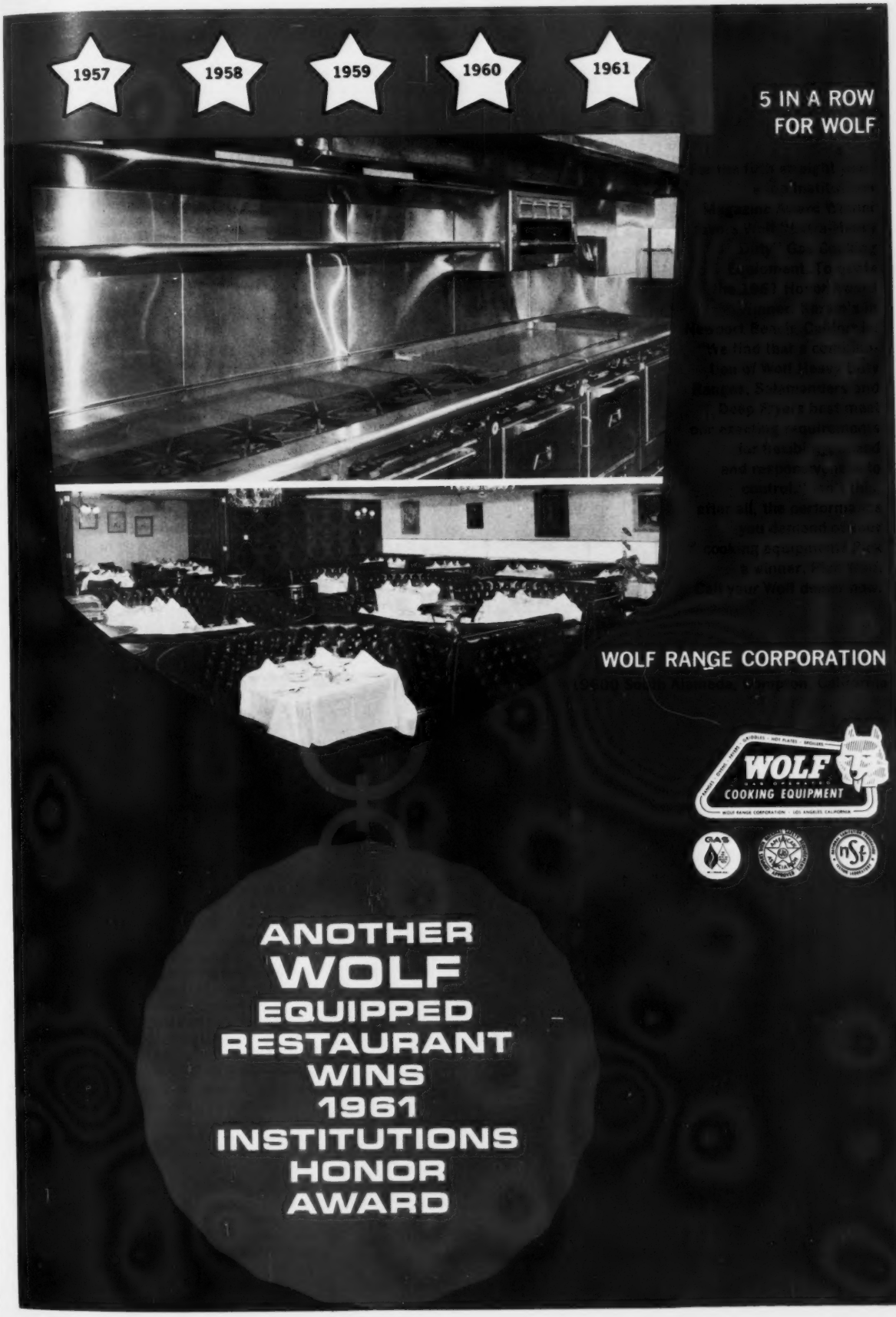
Peaches. Pet tricks for preventing darkening of fresh peaches include brown sugar and cracked ice for salad, fresh lemon juice and powdered sugar for desserts, and for garniture, fresh lemon juice and cracked ice. Tantalizing dessert ideas are fresh sliced peaches splashed with champagne; chocolate wafer crust with peach ice cream, whipped cream, and a scattering of blueberries; rum-soaked pound cake with peach, pistachio ice cream, whipped cream, and toasted almonds. For different salads, use peaches in place of celery in lobster salad. Poached peaches as a garnish are another idea.

Sandwiches with Imagination. Changing the shape, using open sandwich combinations, filling hollowed-out rolls, using kebobs, and adding garnishes (from frozen cranberry sauce to jellied horseradish cream, to marinated artichoke hearts) are some of the interesting sandwich suggestions included.

Melons. How do you pick a good melon? When are they ready? How are they packed? What are the characteristics of cantaloupe, honeydew, watermelons, Cranshaws, and Persian, Casaba, and Spanish melons? These questions are answered, and a melon availability chart (monthly) is presented.

Advances in Dishwashing. Problems of dish room operation are solved chiefly by means of equipment, chemicals, and human beings. Newer developments in each of these areas are described. Part of the article is devoted to a management checklist of eighteen questions which, if unanswerable, indicate the need to call in a dishwashing specialist.

Standardized Restaurant. The key to profit is more volume; which is possible through the "standardized" restaurant" (one serving a fixed menu). The heart of the system is the "zero food bank" principle, coupled with efficient layout and basic equipment. There are no basic preparation facilities in the layout as presented. Food is to be purchased already prepared (frozen, dehydrated, "instants," premixes, "assistives"). A sample menu


1957
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5 IN A ROW
FOR WOLF
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ANOTHER
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At last! A *liquid* salt substitute that's double-acting: adds the snap and zest of salt . . . and *boosts* the true flavor of all foods. Jaded appetites perk up . . . foods taste better . . . menus take on new life. And Liquid Saltrol is easily dispensed and measured—no grains and guesswork! Highly stable, Liquid Saltrol is perfect for table use, baking, cooking and canning. Chief ingredients are Potassium Chloride and Ammonium Chloride. Sodium content averages 3 mgs. in 100 grams or less than 1 mg. per oz. Packed 12 — 4 oz. bottles per case.

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for standardized operations is given.

Food Display Cases. Display cases give opportunity to display merchandise for "eye appeal" and boost check averages. They can form the nucleus of a profitable take-out business. Selection of display equipment is related to use and location, not price. Low-temperature cases are becoming more common. Design should be simple. In refrigerated cases, location is a factor, and the blower system must be checked (too high a velocity of air movement inside tends to hasten drying of food). Signs of craftsmanship are pointed up. Display cases of five manufacturers are pictured and described.

The Food Checker. The food checker checks every order for portion size, attractive presentation, and general appearance. He reports to the manager directly (is not under the supervision of the chef or the head waiter). There is constant communication between the waiter and the checker so that the guest will be served at the speed he desires. Procedure for writing up the guest check is described. In every phase of service, the food checker controls the quality.

Personnel Control. One restaurant credits its high quality personnel to the following: (a) consistently good working conditions, (b) higher-than-average wages, (c) merit raises, (d) a five-day week, (e) recognition and respect for employees, (f) paid hospitalization and medical insurance, (g) free uniforms, and (h) a new profit-sharing arrangement. Turnover is charted and occurs in the lower levels of income and responsibility. A comprehensive interviewing technique is used to aid further in cutting down turnover. Recipe development and standardization through a test kitchen set-up also add to the control concept.

Purchasing. Careful selection of purveyors; written specifications; testing of food items for quality, appearance, and flavor; definite menu planning standards; fixed selling price on entrées; and consideration of the season of the year are among factors influencing purchasing procedures.

Controlled Accounting. A planned operating, or profit-and-loss statement for a month for a restaurant operation is illustrated. It consists of the planned sales in dollars, the cost of sales (or food cost percentage), with a resulting gross margin per cent. Salaries are planned by allocating percentages to various groups (storeroom, kitchen, service, and so on). Other expenses, such as laundry maintenance, supplies, and advertising, make up the "total controllable expense."

Physical inventories of liquor and food are taken monthly, and inventory records are kept for glassware, china, and silverware.

Managers are not held responsible for overhead expense. A method is given for arriving at a planned net profit for the next month. Inventory is stressed, and the handling of credit cards is reviewed.

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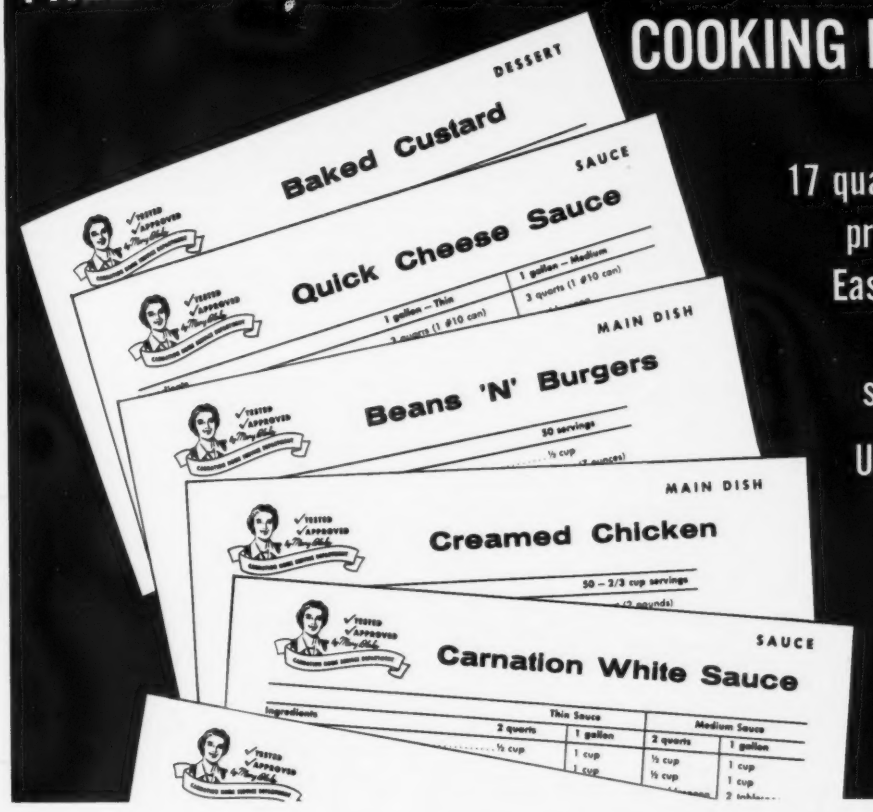

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Tentative Program, 44th Annual Meeting

THE AMERICAN DIETETIC ASSOCIATION
Saint Louis, Missouri—October 24–27, 1961

All meetings and activities, unless otherwise specified, will be held at the Kiel Auditorium, October 24-26.

Saturday, October 21

9:30 a.m.–4:30 p.m.—CONFERENCE OF DIRECTORS AND STAFFS OF APPROVED DIETETIC INTERNSHIPS, Sheraton-Jefferson Hotel (faculties of college and university home economics departments invited)

Sunday, October 22

1:30–4:30 p.m.—CONFERENCE OF FACULTIES OF COLLEGE AND UNIVERSITY HOME ECONOMICS DEPARTMENTS AND APPROVED DIETETIC INTERNSHIPS, Sheraton-Jefferson Hotel (closed meeting)

2:00–8:00 p.m.—REGISTRATION, Sheraton-Jefferson Hotel

7:00–8:30 p.m.—ORIENTATION OF NEW DELEGATES TO THE HOUSE OF DELEGATES, Sheraton-Jefferson Hotel

Monday, October 23

7:30–8:20 a.m.—REGISTRATION OF DELEGATES TO THE HOUSE OF DELEGATES, Sheraton-Jefferson Hotel

8:00–8:20 a.m.—REGISTRATION, Sheraton-Jefferson Hotel (delegates only)

8:30 a.m.–12:15 p.m.—MEETING OF THE HOUSE OF DELEGATES, Sheraton-Jefferson Hotel (Members of the Association are encouraged to audit this meeting.)

8:30 a.m.–8:00 p.m.—REGISTRATION, Sheraton-Jefferson Hotel

12:30–3:00 p.m.—LUNCHEON, Sheraton-Jefferson Hotel (members of the House of Delegates and Alternate Delegates only)

3:00–5:00 p.m.—MEETING OF THE HOUSE OF DELEGATES, Sheraton-Jefferson Hotel (Members of the Association are encouraged to audit this meeting.)

7:30–10:00 p.m.—LISTEN–THINK–DO, Sheraton-Jefferson Hotel

Making the Most of Your Creative Abilities—Francis A. Cartier, Ph.D., Associate Professor of Communication, Air University, Maxwell Air Force Base, Ala.

Symposium: 1960-1961 Section Highlights

J. June Stein, Chairman, A.D.A. Community Nutrition Section Chairman

Dorothy M. Kinnear, A.D.A. Diet Therapy Section Chairman

F. Eugenia Whitehead, D.Sc., A.D.A. Education Section Chairman

Ethel A. Downey, A.D.A. Food Administration Section Chairman

Section Projects Displayed from States

Discussion on Present and Future Section Activities

Tuesday, October 24

The structure of the program has been changed somewhat this year in that a whole day is being devoted to selected subjects, such as quality food, fiscal control, and so on.

7:30–8:00 a.m.—REGISTRATION OF DELEGATES TO THE HOUSE OF DELEGATES, Sheraton-Jefferson Hotel

8:00–9:45 a.m.—MEETING OF THE HOUSE OF DELEGATES, Sheraton-Jefferson Hotel

8:30 a.m.–4:00 p.m.—REGISTRATION, Kiel Auditorium

8:30 a.m.–5:00 p.m.—VISIT EXHIBITS, Kiel Auditorium

10:15–11:15 a.m.—OPENING SESSION, Kiel Auditorium

Invocation—Reverend Joseph Adams, O.F.M., Cap., Pastor, St. Charles Borromeo Church, St. Louis

Presentation of the Colors—ROTC Color Guard, Washington University, St. Louis

Introduction of Coordinating Cabinet

World Health Problems Today—Leroy E. Burney, M.D., Vice President for the Health Sciences, Temple Univ., Philadelphia, and Former Surgeon General, U.S. Public Health Service

11:20 a.m.–12:20 p.m.—CONGREGATE AND RELATE

Let's Streamline Our Parliamentary Procedure—Marguerite Grumme, Registered Parliamentarian, St. Louis

Our Role in Nutrition of the Aging–At Home and in Institutions—Nelda Ross Larsson, New York City; Geraldine M. Piper, Nutrition Consultant, Div. of Chronic Diseases, U.S. Public Health Service, Washington, D.C.; and Lillian M. Reiner, Dietary Consultant, Div. of Aging, Federation of Protestant Welfare Agencies, New York City

College Food Service Today—Doris Hittle, Administrative Dietitian, Iowa State Univ., Ames

A.D.A. career film, "View from the Mountain," and slidefilm, "Take a Good Look"—Frances W. Margut, Chief, Dietetic Service, VA Hospital, Lebanon, Pa.

12:30–2:15 p.m.—FOOD SERVICE MANAGEMENT

What We Need in Food Service Management—Donald Greenaway, Executive Vice President, National Restaurant Assn., Chicago

Food Service Management as Seen by:

Hospital Administrator—John Zugich, Assistant Director, Univ. of Michigan Medical Center, Ann Arbor

Director of Dietetics—Henriette D. Gebert, Director of Dietetics, Passavant Memorial Hospital, Chicago

Management of Contract Food Service—Elizabeth Perry, Director, Hospital Div., Stouffer's Management Food Service, Cleveland

Director of College Food Service — Loyal Horton, Director, Food Services, Associated Colleges of Illinois, Chicago

12:45–1:30 p.m.—RX FOR IMPROVING YOUR COMMUNICATION

The Strategy of Communication—George H. Axinn, Ph.D., Coordinator, Univ. of Nigeria Program, Michigan State Univ., East Lansing

1:30–2:45 p.m.—Effective Communication in Administration—R. G. Seymour, Ph.D., Director, Executive Development Center, Univ. of Illinois, Urbana

1:30–2:45 p.m.—Effective Communication in Medical Therapy—Edward Wellin, Ph.D., Associate Professor, Dept. of Sociology, Rutgers Univ., New Brunswick, N. J.

Elizabeth K. Caso, Instructor in Nutrition, Dept. of Public Health Practice, Harvard Univ. School of Public Health, Boston, *Coordinator*

3:15–4:30 p.m.—BUSINESS MEETING OF MEMBERS OF THE AMERICAN DIETETIC ASSOCIATION—Association Highlights of 1960-1961—with a Look to the Future

8:00–9:15 p.m.—Widening Your Horizons, Sheraton-Jefferson Hotel

Latest Advances in Nutrition—Robert E. Shank,

M.D., Head, Dept. of Preventive Medicine, Washington Univ. School of Medicine, St. Louis

Your Profession and the Two Cultures—James A. McCain, Ed.D., LL.D., President, Kansas State Univ., Manhattan

Wednesday, October 25

7:15–9:15 a.m.—BREAKFAST AND MEETING FOR PRESENT AND INCOMING EXECUTIVE BOARDS OF STATE DIETETIC ASSOCIATIONS—Adelia M. Beeuwkes, A.D.A. President-Elect, *and* A. June Bricker, Ph.D., A.D.A. Speaker-Elect, *Co-Chairmen*, Sheraton-Jefferson Hotel

8:00–9:15 a.m.—CONGREGATE AND RELATE, Kiel Auditorium and Sheraton-Jefferson Hotel

Meeting of Dietary Consultants to Small Hospitals and Similar Facilities—Geraldine W. Getty, Dietitian Consultant, Arkansas State Bd. of Health, Little Rock

Orientation for Hospital Administration Residents within the Hospital Structure—Grace L. Stumpf, Director of Dietetics, Univ. of Michigan Hospital, Ann Arbor, *and* John Zugich, Assistant Director, Univ. of Michigan Medical Center

8:30 a.m.–4:00 p.m.—REGISTRATION

9:00 a.m.–5:00 p.m.—VISIT EXHIBITS

FISCAL CONTROL

9:30–10:00 a.m.—The Need for Fiscal Control—Stephen W. Vasquez, C.P.A., Dean, School of Commerce and Finance, St. Louis Univ., St. Louis

10:00–10:45 a.m.—Budgeting and Controlling Food Costs—William W. Frasure, Ph.D., Professor of Accounting, Univ. of Pittsburgh

11:20–11:40 a.m.—Estimating Income—Charles Moore, Assistant Director, Univ. of Kansas Medical Center, Kansas City

12:55–1:25 p.m.—Interpreting Financial Statements—Paul S. Damazo, Food Facilities Consultant, Glendale, California

1:30–2:00 p.m.—Purchasing Food to Best Advantage—Aimee N. Moore, Ph.D., Director of Nutrition and Dietetics, Medical Center, Univ. of Missouri, Columbia

2:05–2:25 p.m.—Menu Planning and Costing as Management Tools—Helen A. Buik, Manager of Restaurants, T. Eaton & Co., Toronto, Canada

3:00–3:30 p.m.—Efficiency in Personnel Utilization—Lt. Col. Ruby Z. Winslow, AMSC, Chief, Food Service Div., Walter Reed General Hospital, Washington, D.C.

3:30–4:00 p.m.—Physical Plant Arrangement and Equipment in the Department of Dietetics—Katherine E. Flack, Director of Nutrition Services, State of New York Dept. of Mental Hygiene, Albany

OBESITY AND WEIGHT CONTROL

9:45–10:05 a.m.—Overweight in Children as Related to Height and Age—Milicent L. Hathaway, Ph.D., Nutrition Specialist, Human Nutrition Research Div., U.S. Dept. of Agriculture, Washington, D.C.

10:10–10:30 a.m.—Well-Baby Clinics and Preventive Weight Control—F. Howell Wright, M.D., Chairman, Dept. of Pediatrics, Bobs Roberts Memorial Hospital for Children, Univ. of Chicago Clinics

10:30–10:50 a.m.—Weight Control in Adolescence—J. Roswell Gallagher, M.D., Chief, The Adolescent Unit, The Children's Hospital Medical Center, Boston

1:55–2:15 p.m.—Newest Findings in Appetite and Weight Control—Jean Mayer, Ph.D., D.Sc., Associate Professor of Nutrition, Harvard Univ., School of Public Health

2:20–2:40 p.m.—The Concept of Preferred Weight: Indications and Contra-Indications to Weight Reduction—Walter W. Hamburger, M.D., Associate Professor, Dept. of Psychiatry, Univ. of Rochester School of Medicine and Dentistry

RESEARCH METHODS AND DIETARY SURVEYS

3:30–4:10 p.m.—The Application of Survey Research Principles—Charles A. Metzner, Ph.D., Associate Professor of Public Health Economics, Univ. of Michigan School of Public Health, Ann Arbor

4:10–4:45 p.m.—A Pilot Study Using Survey Research Methods—Beryl G. Becker, Research Associate, Public Health Nutrition, Univ. of Michigan School of Public Health, Ann Arbor

4:45–5:00 p.m.—*Discussant*, Adelia M. Beeuwkes, Professor of Public Health Nutrition, Univ. of Michigan School of Public Health, Ann Arbor

3:30–5:00 p.m.—TRENDS IN EDUCATION

Evaluation of Teaching Techniques—Victor E. Ricks, Ph.D., Professor of Education, Univ. of Illinois, Chicago

Nutrition in a University School of Nursing—Marjorie E. Newton, Assistant Professor of Nutrition, Univ. of California School of Nursing, San Francisco

Integration of Diet Therapy in the Nursing Curriculum—Louise I. Neumann, Teaching Dietitian, Highland Alameda County Hospital, Oakland

Teaching Methods in Food Service Management—Nina Edelblute, Ph.D., Associate Professor of Institutional Management, Kansas State Univ., Manhattan

5:00–6:00 p.m.—THE A.D.A. EXECUTIVE BOARD AT HOME TO DIETETIC INTERNS, Sheraton-Jefferson Hotel

6:00–8:00 p.m.—ALUMNAE MEAL FUNCTIONS–COLLEGES, UNIVERSITIES, AND MILITARY SERVICES, Sheraton-Jefferson Hotel

FREE EVENING

Thursday, October 26

7:15–8:15 a.m.—ALUMNAE BREAKFASTS–DIETETIC INTERNSHIPS, Sheraton-Jefferson Hotel

8:00–9:30 a.m.—CONGREGATE AND RELATE, Kiel Auditorium and Sheraton-Jefferson Hotel

Food Service Supervisor Training Programs—*Panel*—Alma G. McDougall, Associate Professor of Hotel and Institution Administration, The Pennsylvania State Univ., University Park; Myrtle B. Van Horne, Coordinator, Hospital Food Service Supervisors Course, Michigan State Univ., East Lansing; Ruth E. Silvester, Director of Dietetics, Allegheny General Hospital, Pittsburgh; *and* Sallie J. Mooring, Project Director, A.D.A. Food Service Supervisors' Program, Chicago

Disaster Feeding and Civil Defense Planning—Vera A. Tharp, Nutritionist, Illinois Dept. of Public Welfare, Springfield, and Chairman, A.D.A. Committee on Disaster Feeding and Civil Defense Planning, *Moderator;* Alda R. Bush, Emergency Welfare Services, Dept. of Health, Education, and Welfare, Washington, D.C.; Rosemary L. Lodde, Instructor, Dept. of Foods and Nutrition, Purdue University, Lafayette, Ind.; Anne H. White, Dietitian, Illinois Eye and Ear Infirmary, Chicago; *and* Maj. Ardeth J. Wick, Chief, Food Service Div., U.S. Army Hospital, Ft. Campbell, Ky.

What Are We Doing in Combating Food Misinformation?—J. June Stein, Nutrition Consultant, Washington State Dept. of Health, Seattle, *Moderator;* Mary Louise Johnson, D.Sc., Director, School of Home Economics, Univ. of Washington, Seattle; Ruth E. Brennan, Nutrition Consultant, St. Louis County Health Dept., Clayton, Mo.; *and* Gaynold C. Jensen, Nutrition Consultant, Minneapolis

8:30 a.m.–4:00 p.m.—REGISTRATION

9:00 a.m.–4:00 p.m.—VISIT EXHIBITS

NEWER CONCEPTS IN THE TREATMENT OF DIABETES

9:45–10:05 a.m.—Comparative Utilization of Various Carbohydrates in New Dietary Products—Lillian Recant, M.D., Assistant Physician, Dept. of Preventive Medicine and Public Health, Washington Univ. School of Medicine, St. Louis

10:10–10:30 a.m.—Fat Levels in Diabetic Diets—Herbert Pollack, M.D., Ph.D., New York City

10:35–10:55 a.m.—Oral Hypoglycemic Agents—Robert E. Bolinger, M.D., Associate Professor, Kansas Univ. School of Medicine, Kansas City

11:35–11:55 a.m.—Unmeasured Diets in the Treatment of Juvenile Diabetes—Harvey C. Knowles, Jr., M.D., Professor of Medicine, Univ. of Cincinnati

12:00–12:20 p.m.—Effects of Customs, Emotions, and Behavior on Diabetes Mellitus—Lawrence E. Hinkle, Jr., M.D., The New York Hospital–Cornell Medical Center, New York City

ATHEROSCLEROSIS

1:45–2:05 p.m.—An Over-All Look at Atherosclerosis—W. Henry Sebrell, Jr., M.D., Director, Institute of Nutrition Sciences, Columbia Univ., New York City

2:10–2:30 p.m.—Should the American Diet Be Drastically Modified?—W. Stanley Hartroft, M.D., Ph.D., Director, The Research Institutes of The Hospital for Sick Children, Toronto, Canada

3:15–3:45 p.m.—Recent Epidemiologic Studies in Atherosclerosis and New Preventive Programs—Jeremiah Stamler, M.D., Director, Div. of Chronic Disease Control Program, Chicago Bd. of Health

3:45–4:05 p.m.—Fat-Controlled Diet Booklet—Elizabeth K. Caso, Instructor in Nutrition, Harvard Univ. School of Public Health, Boston

QUALITY FOOD

10:30–10:55 a.m.—Patients' and Dietitians' Standards of Quality Food—Elizabeth M. McCune, Assistant Director, Dept. of Dietetics and Nutrition, Univ. of Kansas Medical Center, Kansas City

11:00–11:25 a.m.—Selective vs. Nonselective Menus—Mildred L. Jones, Assistant Manager in Charge of Food, Residence Halls, Michigan State Univ., East Lansing, *and* Margaret A. Ohlson, Ph.D., Director, Dept. of Nutrition, University Hospitals, State Univ. of Iowa, Iowa City

11:30–11:55 a.m.—Patients' and Doctors' Opinions of Hospital Food Service—Jacob Feldman, Director of Research, National Opinion Research Center, Univ. of Chicago

1:15–1:40 p.m.—Food Is for People—Sam R. Hoover, Ph.D., Assistant to the Administrator, Agricultural Research Service, U.S. Dept. of Agriculture, Washington, D.C.

1:40–2:10 p.m.—The Convenience Food Potential—Lendal H. Kotschevar, Ph.D., Professor, School of Hotel, Restaurant, and Institutional Management, Michigan State Univ., East Lansing

2:10–2:35 p.m.—Accomplishments in Space Feeding Research—Beatrice Finkelstein, Research Nutritionist, Aero Space Medical Laboratory, Air Systems Division, Air Force Systems Command, Wright Patterson Air Force Base, Dayton

2:35–3:00 p.m.—Precooked Frozen Food Standards—Donald K. Tressler, Ph.D., President, Avi Publishing Co., Westport, Conn.

3:40–5:00 p.m.—Product Standardization for Quality and Profit Control—Grace A. Miller, Ph.D., Associate Professor, Institution Administration and Research, Michigan State Univ., East Lansing, *and* Margarite Burgoin Goodenow, Administrative Dietitian, Univ. of Michigan Hospital, Ann Arbor

7:30–10:00 p.m.—ANNUAL BANQUET, Sheraton-Jefferson Hotel

Invocation—Reverend Robert E. Nolte, Pastor, Friedens United Church of Christ, St. Louis

Washington University Men's Glee Club

Presentation of Honorary Membership

Presentation of Mary Swartz Rose Fellowship and Mead Johnson, Lydia J. Roberts Essay, and Marjorie Hulsizer Copher Awards

Introduction of Incoming Coordinating Cabinet

Friday, October 27

All Friday meetings will be held in the Sheraton-Jefferson Hotel

7:15–8:15 a.m.—ALUMNAE BREAKFASTS–DIETETIC INTERNSHIPS

8:15–9:30 a.m.—CONGREGATE AND RELATE

New Concepts Mean Changes—in Mental Hospital Food Service—Margaret C. Madden, Chief Dietitian, Philadelphia Psychiatric Hospital

What's New in Teaching Nutrition to Nursing Students?—Mary E. Kelly, Associate Professor of Dietetics, School of Nursing, Medical College of Virginia, Richmond

Tomorrow's Methods in Practice Today for School Lunch—Helen E. Underwood, Director of School Lunch Services, Caddo Parish School Bd., Shreveport, La.

"Dial-a-Dietitian" Program—Panel, Muriel G. Wagner, Nutritionist, The Merrill-Palmer Institute, Detroit, *Moderator;* Committee Members; *and* Horace L. Sipple, Ph.D., Executive Secretary, The Nutrition Foundation Inc., New York City

The Shared and Part-Time Dietitian—Betty Hoover, Dietitian, Rush Memorial Hospital, Rushville; Margaret Mary Hospital, Batesville; Dearborn County Hospital, Lawrenceburg; and Decatur County Hospital, Greensburg, Ind.

Developing Standardized Recipes—Grace A. Miller, Ph.D., Associate Professor, Institution Administration and Research, Michigan State Univ., East Lansing, *and* Margarite Burgoin Goodenow, Administrative Dietitian, Univ. of Michigan Hospital, Ann Arbor

10:00–11:00 a.m.—THE A.D.A. EXECUTIVE BOARD WELCOMES OUR VISITORS FROM OTHER LANDS

9:45–11:50 a.m.—THE FUTURE OF THE AMERICAN DIET

Meeting Food Needs with Our Agricultural Abundance—Howard P. Davis, Director, Food Stamp Plan Development, U.S. Dept. of Agriculture, Washington, D.C.

An Evaluation of New Food Products—Paul Day, Ph.D., Scientific Director, Food and Drug Administration, Washington, D.C.

Fatty Acids in New Margarines—Eldon E. Rice, Ph.D., Senior Scientist, Research Laboratory, Swift & Company, Chicago

Latest Findings in Dental Caries—Olaf Mickelsen, Ph.D., Chief, Laboratory of Nutrition and Endocrinology, National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Md.

9:45 a.m.–12:05 p.m.—PLANNING OR REMODELING A DEPARTMENT OF DIETETICS?

Introduction—Mary C. Zahasky, Director of Dietetics, Univ. of Oklahoma Medical Center, Oklahoma City

The Administrator—Raymond D. Crews, Business Administrator, Univ. of Oklahoma Medical Center

The Architect—Bill Blair, Benham Engineering Co., Oklahoma City

The Engineer—Herbert C. O'Neil, Director, Physical Plant, Univ. of Oklahoma Medical Center

The Dietitian—Emogene Ogle, Asst. Director of Dietetics, Univ. of Oklahoma Medical Center

12:15–2:00 p.m.—HISTORY OF THE ASSOCIATION LUNCHEON—Anna Boller Beach, Director, Nutrition Clinic, Presbyterian-Saint Luke's Hospital, Chicago, and Mary P. Huddleson, New Canaan, Conn.

2:15–3:40 p.m.—PLANNING OR REMODELING A DEPARTMENT OF DIETETICS? (continued)
Specifications for a New or Remodeled Department of Dietetics—Charles A. Farish, Executive Director, National Sanitation Foundation Testing Laboratory, Ann Arbor
Systems Approach to a Solution of a Problem—Alfred L. Palmer, Systems Analyst of the Great Lakes Pipe Line, Kansas City, Mo.

2:15–3:50 p.m.—DIET THERAPY IN THE HOSPITAL
New Roles for the Therapeutic Dietitian—Arlene Payne, Graduate Student, School of Education, Univ. of Chicago
Short Methods of Dietary Calculation and New Data on Food Composition—Faith Clark, Ph.D., Director, Household Economics Research Div., U.S. Dept. of Agriculture, Washington, D.C.

COMMERCIAL EXHIBITORS—44th ANNUAL MEETING THE AMERICAN DIETETIC ASSOCIATION

KIEL AUDITORIUM, ST. LOUIS, OCTOBER 24, 25, and 26, 1961

Abbott Laboratories
Allen Foods, Inc.
American Dry Milk Institute, Inc.
American Gas Assn.
American Institute of Baking
American Sheep Producers Council, Inc.
American Sugar Refining Co.
Armour and Co.
Association of Institutional Distributors
Automatic Food Shaping Co., Inc.

Beech-Nut Baby Foods
G. S. Blakeslee & Co.
S. Blickman, Inc.
G. S. Blodgett Co., Inc.
The Borden Co.
Brookpark, Inc.
Bucks County Enterprises, Inc.
Buffalo China, Inc.

Caddy Corporation of America
Calgon Company, Div. of Hagan Chemicals & Controls, Inc.
California Prune Advisory Board
Cambro Incorporated
Campbell Soup Co.
Carnation Co.
Central Products, Inc.
Cereal Institute, Inc.
Chicago Dietetic Supply House, Inc.
Cleveland Range Co.
Cling Peach Advisory Board
Cockle Ventilator Co., Inc.
Continental Coffee Co.
Corn Product Sales Co.
Corning Glass Works
Cory Corp.
The Cream of Wheat Corp.
Crescent Metal Products, Inc.
Custom Food Products, Inc.

Debs Hospital Supplies, Inc.
Diamond Crystal Salt Co.
Dietary Products, American Hospital Supply Corp.
The Dietene Co.
Edward Don & Co.
Dri-Heat Food System, Inc.
DuBois Chemicals, Inc.
Duke Manufacturing Co.

Economics Laboratory, Inc.
Encyclopaedia Britannica, Inc.
E. P. Co., Inc.
Evaporated Milk Assn.

Fearn Foods, Inc.
A. J. Fish Oven Co.
Florida Citrus Commission
Food Machinery & Chemical Corp., Canning Machinery Div.
Foster Refrigerator Corp.
E. Fougera and Co., Inc.
W. H. Frick, Inc.
The Frito Co.

General Electric Co., Commercial Equipment Dept.
General Foods Corp.
General Mills, Inc.
Gerber Products Co.
Green Giant Co.
Groen Mfg. Co.
Gruendler Crusher & Pulverizer Co.

H. J. Heinz Co.
Heublein, Inc., Food Div.
The Hobart Manufacturing Co.
Hoffmann LaRoche, Inc., Fine Chemicals Div.
Hot Food Boxes, Inc.
The Hunt-Wesson People

Institutions Magazine

Kellogg Co.
Keyes Fibre Co.
Klenzade Products, Inc.
Koch Supplies, Inc.
Kraft Foods

Libbey Glass Div., Owens-Illinois Glass Co.
Libby McNeill & Libby
Eli Lilly and Co.
Lincoln Manufacturing Co., Inc.
J. B. Lippincott Co.
Loma Linda Food Co.
Lo-Sodium Dairy Products Corp.
Lowerator Div., American Machine & Foundry Co.

McCormick & Co., Inc.
The Macmillan Co.
Market Forge Co.
Mead Johnson Laboratories
Meals-on-Wheels System
Mercury Mfg. Co., Div. of Steele Harrison Mfg. Co.
Metropolitan Wire Goods Corp.
Middleby-Marshall Oven Co.
Louis Milani Foods, Inc.
L. J. Minor Co.
Mitchell Foods, Inc.
Morton Salt Co.
Multi-Counter Manufacturing Co., Inc.

National Biscuit Co.
National Dairy Council
National Live Stock & Meat Board
The Nestle Co., Inc.
The H. R. Nicholson Co.
Nutting Truck and Caster Co.

Ocean Spray Cranberries, Inc.
Ocoma Foods Co.
Samuel Olson Mfg. Co., Inc.

Pasco Packing Co.
Pet Milk Co.
Pfaelzer Brothers
The Pillsbury Co.
Poultry & Egg National Board
Processed Apples Institute, Inc.
The Procter & Gamble Distributing Co.

The Quaker Oats Co.
Qualheim, Inc.

Raburn Products, Inc.
Ralston Purina Co.
REF Dynamics Corp., Hospital Dietary Div.
Rich Products Corp.
Roll-O-Sheets, Inc.
Rose Brand Syrup Supply Co., Inc.

The Salvajor Co.
W. B. Saunders Co.
Savory Equipment, Inc.
The C. Schmidt Co.
Ad. Seidel & Son, Inc.
Servco Equipment Co.
John Sexton & Co.
Shampaine Industries
Shenango China, Inc.
The Southern Cross Manufacturing Corp.
Southern Equipment Co.
Standard Brands, Inc.
Swartzbaugh Div., United Service Equipment Co., Inc.
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Syracuse China Corp.

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Toledo Scale Corp.

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Webster Van Winkle Corp.
Victory Metal Manufacturing Corp.
Vulcan-Hart Corp.

Waring Products Corp.
Wear-Ever Aluminum, Inc.
Webco Distributors, Inc.
Wisconsin Dept. of Agriculture
Worthington Foods, Inc.
Wyandotte Chemicals Corp.

BIOGRAPHICAL NOTES FROM THE HISTORY OF NUTRITION

Edward Provan Cathcart—July 18, 1877–February 18, 1954

Edward Provan Cathcart was born in Ayr, Scotland, July 18, 1877. He was educated at the Ayr Academy and then went to Glasgow University where he obtained his medical degrees, M.B. and B.Ch. in 1900. Then he set off for Germany intending to study bacteriology, but a visit to Carl Voit's laboratory in Munich changed the course of his life. Voit (1831-1906) at that time was the great master of metabolic studies and calorimetry, and the leading figure in that newly emerging science of nutrition. Cathcart was deeply impressed by Voit's work, and his interest was turned from bacteriology to physiologic chemistry and the nutrition of man. He continued his travels abroad, going to laboratories in Berlin and to St. Petersburg (now Leningrad), where he studied under Pavlov (1849-1936).

On his return to England, Cathcart spent two years as research scholar in the Lister Institute, London. He obtained his M.D. degree (1904) and the next year accepted an appointment at his alma mater, Glasgow University, as Lecturer in Chemical Physiology. Here, he could carry on some of the research that had interested him in Voit's laboratory, and in 1907, he published two papers on the metabolism of protein and of inorganic elements during starvation. The next year he obtained the Doctor of Science degree. Then came the opportunity (1911) for a year of work with F. G. Benedict as Honorary Research Associate in the Carnegie Institute in Washington, D. C. This was a happy year in the study of energy exchanges of man, and the results of his work were published in a classic monograph, "Muscular Work, A Metabolic Study with Special Reference to the Efficiency of the Human Body, as a Machine" (1913).

In 1915, Cathcart went to London University Hospital as Professor of Physiology, and during the years of World War I, he was adviser to the government on problems of physiology, holding the honorary rank of Lieutenant Colonel in the Royal Army Medical Corps. His interest was in problems of nutrition, dietary habits, and energy requirements. He studied the energy expenditure of infantry recruits, and his findings were published in a monograph (1919) written in collaboration with Lord Boyd Orr; a number of papers also appeared in the *Journal of Royal Army Medical Corps* on the physique of soldiers and the expenditure of energy during performance of military tasks.

Glasgow was his real home, and in 1919, Cathcart returned there as Professor of Physiological Chemistry. In 1928, he became Regius Professor of Physiology, a position he held till his retirement in 1947. His further publications show his continued interest in nutrition: in 1921, a monograph "Physiology of Protein Metabolism"; in 1929, "The Human Factor in Industry"; and a series of five reports published by the Medical Research Council on the diets of families in different parts of Britain.

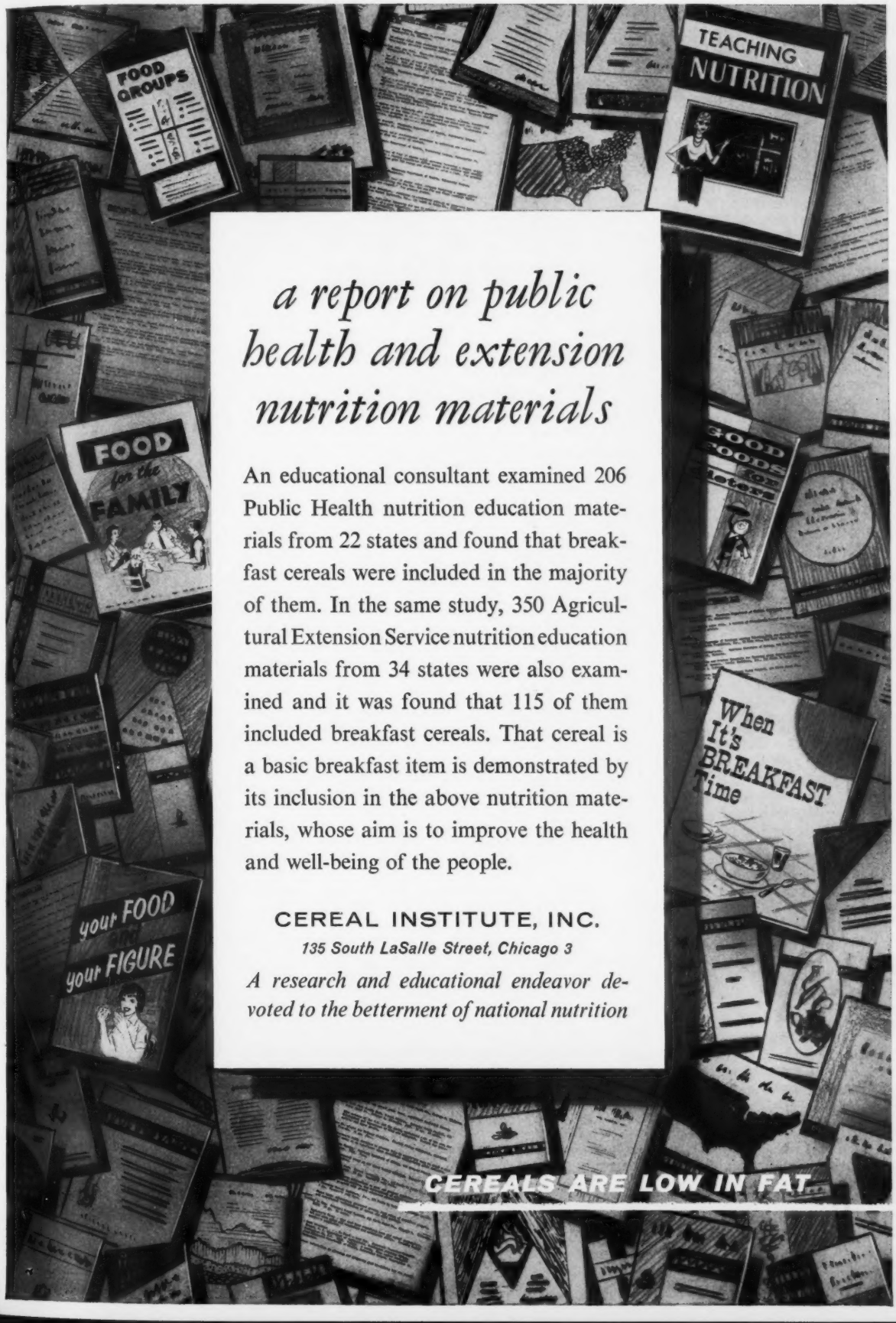
Recognition of the social implications of nutrition led him to a concern for what happened to men in industry. He firmly believed that industry was made for man and not man for industry. Studies in this field led to further monographs: "Physique of Women in Industry" (1927) and "Physique of Man in Industry" (1935), and brought many committee appointments and responsibilities, including service on: the Medical Research Council, Agricultural Research Council, League of Nations Technical Commission on Nutrition, Army Hygiene Committee, Ministry of Health Advisory Committee on Nutrition, Committee on Nutrition in the Colonial Empire, International Labor Office Committee on Industrial Hygiene. From 1933 to 1940, he served as Chairman of the Industrial Health Research Board. World War II brought additional responsibilities as a member of the War Cabinet Scientific Committee on Food Policy and the British Medical Association's Committee on War Time Problems in Nutrition.

Honors that came to him included: Fellow of the Royal Society (1920); Commander of the British Empire (1924); honorary LL.D., St. Andrews University (1928) and Glasgow University (1948).

Cathcart was a stimulating teacher; kindly, sympathetic, and encouraging to young workers, and popular among his students and colleagues. He was a man of strong character, shrewd, reflective, but practical. In appearance he was tall and stern of face but had boyish laugh.

Professor Cathcart married Gertrude Dorman who graduated from Glasgow in medicine. They had three daughters, all of whom took medical degrees.

REFERENCES: Obituary—Edward Provan Cathcart. Lancet 266: 469, 1954; Garry, R. C.: Edward Provan Cathcart. Brit. J. Indust. Med. 11:229, 1954; Garry R. C.: Prof. E. P. Cathcart, C. B. E., F.R.S. Nature 173: 522, 1954—*Contributed by E. Neige Todhunter, Ph.D., Dean, School of Home Economics, University of Alabama, Tuscaloosa.*



a report on public health and extension nutrition materials

An educational consultant examined 206 Public Health nutrition education materials from 22 states and found that breakfast cereals were included in the majority of them. In the same study, 350 Agricultural Extension Service nutrition education materials from 34 states were also examined and it was found that 115 of them included breakfast cereals. That cereal is a basic breakfast item is demonstrated by its inclusion in the above nutrition materials, whose aim is to improve the health and well-being of the people.

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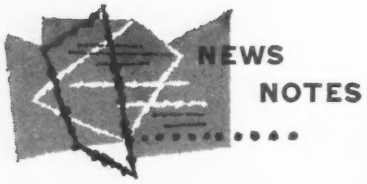

Air Force Honors Miss Finklestein. Beatrice Finkelstein, researcher in nutritional requirements for space travelers, recently became the first woman employee of the Air Force Systems Command to be honored for exceptional civilian service by the Secretary of the Air Force. Miss Finkelstein's work has been reported at the A.D.A. annual meetings, in this JOURNAL, and most recently at the Third International Congress of Dietetics in London.

Dietitians Win Sandwich Awards. A sandwich called "Beef Dauvergne" won for Winifred Ayres, Assistant Director of Foods Service, Presbyterian-St. Luke's Hospital, Chicago, the grand prize in the 1961 national sandwich idea contest. This competition, held annually, is jointly sponsored by the National Restaurant Association and the Wheat Flour Institute. Miss Ayres' prize is an all-expense gourmet tour for two to Europe plus $500 in cash. In 1957, Miss Ayres was the winner of A.D.A.'s Lydia J. Roberts Essay Award.

The second prize of $1000 in the sandwich contest also went to an A.D.A. member, Jean P. Bundy, Roxana, Illinois, for her "turkey festival sandwich."

Congress on Medical Quackery. Medical quacks and charlatans who prey on the sick and the gullible will be spotlighted at the First National Congress on Medical Quackery to be held in Washington, D.C., October 6 and 7. Co-sponsors of this meeting will be the Food and Drug Administration and the A.M.A.'s Department of Investigation. Voluntary organizations and medical societies will participate and/or send representatives. Nutritional quackery, through its penchant for recommending unnecessary vitamins and minerals, will be a major item on the program, with other targets charlatans who profess phony cancer cures and quacks who peddle supposed cures for arthritis.

Other Coming Events. 44th Annual Meeting, *The American Dietetic Association,* St. Louis—October 21 to 24 (see pages 388 to 391, for tentative program).

Food Facilities Planning Workshop, Cornell University, Ithaca, New York —October 16 to 20. Co-sponsored by the National Restaurant Association and Cornell.

Symposium on Obesity Among Teenagers, Stanford University, Stanford, California—October 21. Sponsored by the American Medical's Association's Council on Foods and Nutrition.

Fish 'n' Seafood Parade—October 16 through 22. Sponsored by the U.S. Bureau of Commercial Fisheries.

Dietary Administration Institute, Boston—November 13 to 17. Co-sponsored by the American Hospital Association and The American Dietetic Association.

89th Annual Meeting, *American Public Health Association,* Detroit—November 13 to 17.

Annual convention, *National Society for Crippled Children and Adults,* Denver—November 16 to 21.

Annual meeting, *Association of Military Surgeons,* Washington, D. C.—November 6 to 8. Special meeting of Medical Specialist Section, November 7, 2:30 p.m. (Reserve officers may earn reserve points by attending.)

The following foods will be in plentiful supply during October, according to predictions by the USDA:

Protein foods
Beef
Cheese
Chickens—broilers and fryers
Turkeys
Other foods
Apples
Cranberries
Potatoes
Rice
Vegetable fats and oils

Food Manual for Nursing Homes. Persons responsible for the welfare and the diets of aged patients in nursing homes are addressed in the *Food Service Manual* compiled by the Division of Services for the Aging, Kansas State Department of Social Welfare. Its chapters deal with: the "Basic 7"; menu planning, with special attention given to supper entrées; protein foods and meat and egg cookery; vegetable cookery; weight control and the Recommended Dietary Allowances; kitchen planning; food purchasing and storage; and modified diets. One chapter is devoted to food measures and equivalents, while the last fifty pages contain recipes, many with pictures to indicate plate arrangement. A limited number of copies are available for $1 from the issuing agency in Topeka.

New USDA Releases. Summer brought three new publications from the USDA. The first, PA 425, "Planning Your Family Food Supply," was prepared by Dr. Evelyn Spindler, Extension Nutritionist, to serve as a guide for county extension workers. The problem of whether it pays to produce food at home, what foods to buy and what to produce at home, and better use of the family food dollar are features of the discussion. Copies may be ordered for 15 cents each from the Government Printing Office, Washington 25, D. C.

"The Food We Eat" is the title of Miscellaneous Publication No. 870 of the USDA, which recapitulates our use of farm products. Statistics on food consumption — processed foods, seasonal foods, percentage of income spent for food, costs of food—are some of the topics covered.

Food economics is also the subject of a second new leaflet, "Food Is a Bargain" (Marketing Bulletin No. 18), which is a picture story (cartoon-type drawings) of the changes that took place in the nation's food bill between 1947-49 and 1960. The cost of food in terms of labor time required to buy it is spotlighted (it has gone down). Single copies of the last two publications may be requested from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

FAO Booklets. With the subject of additives currently in the news, a report compiled by the Food and Agriculture Organization is most timely. Titled *Food Additive Control in the Netherlands* by Dr. W. Meijer, it is No. 3 in the FAO Food Additive Control Series. After an historical introduction to the subject and an explanation of how legislation in the Netherlands has been established and methods of control, the current regulations on additives in that country are outlined. This includes a list of permitted additives and coloring materials, as well as data on tolerances for sulphurous acid, benzoic acid, and pesticides. Five pages are devoted to a list of the applicable laws and regulations, and the booklet concludes with an extensive bibliography. It may be ordered for 50 cents a copy from: International Documents Service, Columbia University Press, 2960 Broadway, New York 27.

A second new booklet from FAO deals with *Fish, the Great Potential Food Supply* (No. 3 in the World Food Problems series). Written by D. B. Finn, Director of FAO's Fisheries Division, it goes into the problem of increasing world catch of fish, the problems which hinder and hamper fish production, some examples of work and progress in fisheries, and increasing the supply of fish. Photographs illustrate some of the situations encountered by FAO experts around the globe, while pictographs indicate the world fish catch for six postwar years, the total catches of eight leading fishing nations, and consumption of fish and other animal protein in various areas of the world. Copies of this report sell for 50 cents each and may be ordered from the same source.

New FAO/WHO Report. A new publication, the fifth report of the Joint FAO/WHO Expert Committee on Food Additives, surveys the danger of cancer from food additives. Information, the Committee points out, is lacking on the toxicity or potential carcinogenicity of many food additives, and many of the tests now used

comparison proves

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- Exclusive Food-ala-Cart design makes tray preparation, assembly and tray serving easier.
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- Each Food-ala-Cart is equipped with two 7-quart thermo jugs that keep hot or cold drinks at proper temperature up to 3 hours from filling time.
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- Food-ala-Cart has large unobstructed tray assembly area with end guard rails.
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1154-GR Glass Rack & Milk Case Dolly

Fig. 932 Linen and Laundry Truck

Fig. 845 Platform Truck

Fig. 663-LW Round Container Dolly

Fig. 1152 Two Wheel Truck

On display, Booth 600, American Dietetic Assn. Annual Meeting, Oct. 24-26, St. Louis, Mo.

are inadequate. The Committee examines the principles to which such tests should conform and criteria for interpreting results. *Evaluation of the Carcinogenic Hazards of Food Additives* is World Health Organization Technical Report Series No. 220 (FAO Nutrition Meetings Report Series No. 29). Copies may also be ordered from the International Documents Service, Columbia University Press, 2960 Broadway, New York 27—60 cents each.

Proceedings of International Congress. Those who attended the Third International Congress of Dietetics in July in London received as part of their registration, copies of the *Proceedings*. Persons who were unable to be in London may wish to order copies of the *Proceedings* from Newman Books, Ltd., 68 Welbeck Street, London W1, England. The price is $10 a copy.

Correction. We have discovered that in the August issue of the JOURNAL, the printer omitted two lines at the top of page 116, in the article, "Nutritional Value of Dehydrated Foods" by Miriam Higgins Thomas and Doris Howes Calloway. Please insert the following in column 1, page 116, directly below Table 7 and above the text: "The values shown in Table 7 summarize findings in two patients for whom the most complete data . . ."

Workshop in Tuskegee. In July, the Department of Hospital Dietetics, Tuskegee Institute, conducted a five-day workshop for food service workers and supervisors in small hospitals and nursing homes. The program carried out the theme, "Adequate Nutrition—The Keystone to Health and Longevity." Participants came from Georgia, Mississippi, Alabama, and Florida.

Interns Graduate. On July 29, exercises were held at *Henry Ford Hospital*, Detroit, in honor of ten graduating dietetic interns. Zoe E. Anderson, Ph.D., Chairman, Department of Home Economics, Wayne State University, spoke to the graduates on "Lessons from Life." The following interns received caps, pins, and diplomas:

Joan Campbell, University of Toronto
Mary Ann Capozzoli, Seton Hill College
Juanita Cheon (from Malaya), Drexel Institute
Thelma Fernandez, Philippine Women's University
Andrea Collins, Wayne State University
Benita Pitpit (from the Philippines), Immaculate Heart College
Jeannine Maillet, Lavall University, Quebec
Margaret Martell, Mundelein College
Edith Oda, University of Hawaii
Mary Pender, Colorado State University

On June 29, the following dietetic interns completed their year's work at *Milwaukee County Institutions:*

Betty Jeanne Madaus, University of Wisconsin
Marlea Mittag, Stout State College
Rebecca Richardson, Howard University
Sonia Rivera, Briar Cliff College

Army Personnel Announcements. The following changes in Army dietetic personnel in the AMSC have been announced:

PROMOTIONS FROM CAPTAIN TO LT. COLONEL
Kathryn Buck
Marion Douglas
Mary E. Stack

SEPARATIONS
1st Lt. Caroline Nizborski
2nd Lt. Lucy San Miguel

APPOINTMENT AND ASSIGNMENT TO ACTIVE DUTY
1st Lt. Anne B. Lewis

Ascorbic Acid in Diets. Why have purchases of citrus fruits, tomatoes, strawberries, and some green vegetables dropped in the last decade while total per capita food purchases have risen? This was a problem studied recently by the Wisconsin Agricultural Experiment Station. Interviewers learned that homemakers in cities and suburbs bought almost all their food at the store—mainly supermarkets.

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Rural homemakers used more homegrown tomatoes, strawberries, and some vegetables. Nevertheless, their diets did not rate better in ascorbic acid because their year-round purchases of citrus and other fruits and vegetables were less. The study showed that many small country stores in Wisconsin do not offer the variety or price selection of fruits and vegetables that large city markets do. Also, because of distance, rural families are often handicapped in taking advantage of lower prices and wider selections. Some homemakers said that some ascorbic-acid-rich foods were not available at the local store, but they preferred to buy at such stores for convenience—nearness and open at "all hours." Also, they had credit there, and friends and neighbors bought there.

Salad Dressing with Safflower Oil. A salad dressing, made with safflower oil, that can be frozen and stored is being developed at the USDA's Western Utilization Division Laboratory in Albany, California. The basic dressing is a mixture of safflower oil, waxy-rice flour, and fresh egg yolks. It will remain stable at temperatures as low as 10°F., and the oil and water do not separate on thawing. The researchers are now working to develop a dressing that is stable at 0°F.

Homemakers' Food Buying. Price, nutritive value, and other appeals count less when women buy foods for their families than the family's food likes and dislikes. This is what researchers from the Michigan Agricultural Experiment Station learned when they interviewed 150 nonfarm homemakers in three supermarkets. All homemakers agreed that pleasing their families was their first consideration in choice of food items. Most said they liked to shop for food, did not find it tiring, and believed their time was well spent. Nearly all planned their shopping to the extent of having certain products in mind before they entered the store. Of every ten shoppers, about seven had thought of needed staples or items for the next meal, while five had planned for both. Five had written lists, but only two used lists systematically.

Milk Needs More Appreciation. A better understanding of the nutritive value of milk as related to its price is needed, according to Dr. Dorothy Dickins of the Mississippi Agricultural Experiment Station. A survey conducted under her direction indicated that about 24 per cent of 808 families interviewed in four Mississippi cities had diets seriously low in milk and milk products. Low family income was associated with these shortages. Where meals cost less than average per person, less dairy products were used. Also, shortages most often occurred in large families with low incomes. Dr. Dickins points out that home demonstration agents, home economics teachers, and other reliable specialists in foods and nutrition can help such families get the most value for the milk money they spend.

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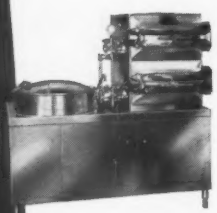

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News of State Associations

Illinois Dietetic Association. The Diet Therapy Section in Illinois has collected from approximately fifty national and local food producers data on the nutrient composition of their products. A bibliography is being compiled, listing these producers and the products covered. (The survey revealed that not all food producers are willing or able to provide such data.) A display is being prepared for the A.D.A. meeting in St. Louis later this month, showing a handy method for assembling such data. The chairman of the project, Stella Wuerffel, points out that such information is especially helpful in planning modified diets. "In planning a low-fat diet, for instance, we may tell a person to drink buttermilk, presuming it is made with skim milk. But in Chicago, several dairies use whole milk to produce buttermilk, which, of course, alters the fat content of the diet."

Illinois has two new local associations, one in *Bloomington* and the other in Downey. The *Bloomington* group was organized on May 4, with ten charter members and the follow-

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ONE PREAM® PACKET CONTROLS...
PORTIONS... 4 grams per factory-sealed foil packet—no more, no less; LABOR COSTS... no fluids to measure or containers to return, sterilize and fill; CONTAMINATION... Pasteurized Pream® is absolutely aseptic until the instant the packet is opened; INVENTORY... Needs no refrigeration, can be stored anywhere, easily counted anytime; PRICE... No seasonal variations, no stock shrinkage from spillage or spoilage; QUALITY... Pream® is Homogenized, Pasteurized and inert-gas packed in moisture-proof foil. Shelf life unconditionally guaranteed one year. M & R Means Reliability!
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ing officers: President, LaFawn May; President-Elect, Willene Darlington; and Secretary-Treasurer, Helen Stilwell.

The *North Shore Dietetic Association,* also organized in the spring, will draw membership from Chicago's northern suburbs. Meetings will be held in the area hospitals. Ada Lois Knott of Waukegan is the first President.

Iowa Dietetic Association. The preparation of cycle menus has been a recent project of the Diet Therapy Section in Iowa. One set for summer and one for winter are planned. They will be designed to encompass the needs for the general, bland, 800-mg. sodium, low-residue, and reducing diets and will be planned for a medium-cost budget. When ready some time this fall, copies will be made available to members of the Iowa Dietetic Association on request and at a nominal charge to others outside the state who request them.

Montana Dietetic Association. This year, Montana dietitians are celebrating the "Silver Jubilee" of the state's organization and affiliation with A.D.A. Twenty-five years ago, when the Montana Dietetic Association was founded, there were fourteen charter members.

New Jersey Dietetic Association. A course designed to bring members up to date with regard to developments in teaching student nurses, dietary counseling services to physicians and dentists, and other community projects, such as home care, is being planned by the New Jersey Dietetic Association. It will be given in cooperation with the Chronic Illness Division of the New Jersey Department of Health.

Ohio Dietetic Association. Lists of dietetic foods available in supermarkets in Cincinnati have been compiled by the Diet Therapy Section of the *Cincinnati Dietetic Association.* Copies are being made available to therapeutic dietitians in the area for use with their patients. A similar project has also been conducted in *Dayton.*

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Save Time!
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Low Sodium Milk fortifies the nutritional value of any diet for it contains many of the proteins, vitamins and minerals so essential for good health and growth.
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Career Guidance in the States

By FRANCES W. MARGUT

A.D.A. Career Guidance Chairman

To be able to publicize at least one career guidance activity for each of the fifty-two affiliated dietetic associations has been my goal this year. With but one more month before the first anniversary of this column, I have succeeded except for five states. From three of the five, I have received no reports during the year and a review of the bulletins received from two reveals no career guidance items. (The fourth, Louisiana, as in past years, has been very faithful and diligent in furthering the cause of career guidance. However, their noteworthy activities have already been reported in the JOURNAL*'s column on "Public Relations in the States." Activities of the Pinellas County Dietetic Association in Florida—where public relations and career guidance have also overlapped—are chronicled in the same column in this issue, so will not be repeated here.)*

May November correct these omissions, so that we can wind up the year in the 100 per cent column!

The **Arkansas Dietetic Association** has voted to pay part of the expenses of interested university students who attend the Association's fall meeting. Members took advantage of the opportunity to attend the spring meeting of neighboring Tennessee and came back to "share and compare" career guidance ideas, which will increase the scope and effectiveness of programs in both associations.

At the Tri-State meeting of the **Idaho, Washington,** and **Oregon Dietetic Associations,** members voted for a concerted, active effort for career guidance. As the first step, recruiting material is to be brought up to date

SWARTZBAUGH UNITRAY CART

SWARTZBAUGH UNITRAY SYSTEM speeds service at Jackson-Madison General Hospital

THE ADMINISTRATOR at Jackson-Madison General Hospital, Jackson, Tennessee, reports that the food and food service are better than ever since the installation of the new Swartzbaugh Unitray food service system.

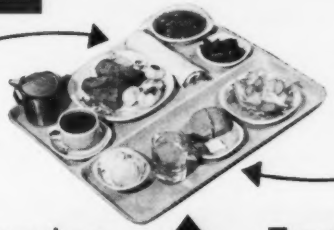
The hospital is one of the nation's first users of the complete new Swartzbaugh system which provides for speedy assembly of hot and cold foods . . . better than 7 trays a minute off the 15' skate wheel assembly line . . . and for maintaining hot and cold food temperatures right up to the time the tray is delivered to the patient!

The photo at the right illustrates the complete Swartzbaugh system in action.

For more details on the complete Swartzbaugh Unitray system, write our sales headquarters at Palmer, Massachusetts.

At Jackson-Madison General, nursing service delivers the trays. The Unitray concept permits assembly and inspection of the complete tray in the main kitchen so there is no confusion of combining hot and cold items when the cart reaches the serving area.

The photo at left shows one of the hospital nurses removing the completely set-up trays from the Swartzbaugh Unitray just outside the patient's room. Photo at right shows tray being delivered into patient's room . . . hot foods are hot . . . cold foods are cold . . . all on the same tray . . . and all in the right places.



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in every high school, with particular emphasis on the availability and suggested use of *View from the Mountain* and "Take a Good Look." (With so many A.D.A. pamphlets coming out in revised form, this is a suggested activity for all states.)

The **Iowa Dietetic Association** reports that *View from the Mountain* has not been neglected for the newer "Take a Good Look." During the year, *View* has been shown in sixteen high schools and two colleges and to one church group. In addition, ten radio talks were given; career day talks were made by members in various areas of the state; and during the annual Veisha program at Iowa State University, 1200 high school students and parents visited the dietetic exhibit and received mimeographed material. About 4500 requested further information.

The **Kentucky Dietetic Association** was one of sixteen groups participating in a unique Health Careers Day. Interested high school students were assigned to specific hospitals for one day, where personal observation and actual participation in food service activities proved to be a most effective contact.

The **Maryland Dietetic Association** makes an effort to hold the interest and make use of its retired members. In western Maryland, over four hundred students have seen the film strip and personal contacts have been made by two retired members. (Have your retired members joined the rocking-chair brigade, or are you making use of their talents and experience?)

The **Oregon Dietetic Association** reports the most unique contact of the year. Members arranged a showing for *View from the Mountain* at the school for Juvenile Delinquent Children. They believe, and I concur, that good material sometimes comes to light in the most unlikely places—so don't let routine thinking stand in your way of branching out into new fields of contact.

South Dakota Dietetic Association has squarely faced up to its own career guidance problem. In the president's message to the members, Sister M. Antoinette, Pierre, says: "Officially, South Dakota has 45 members. The population of the state is 681,000. Evaluating these figures by responsibility, each of us ought to reach 15,200 individuals. Idealistic? . . . Probably. Our choice of dietetics as a profession means an obligation 'to render service for the common good without regard to personal gain' and 'to benefit as many as possible.' How many people have heard our voices, benefited from our activities, have been influenced by our attitudes?"

The first step in the right direction has been taken by publicizing and making use of the film strip "Dietetics as a Career," which enables many to be reached at one time through the efforts of a few.

From **Texas** we read with interest of the "perpetual inventory form" made by the career guidance chairman for reporting work done. This is very necessary, both for states with few members widely scattered, and for large states which have subdivided into local associations. This is a "shared" suggestion which we can all put to use. I am sure Carolyn Carson, Texas Career Guidance chairman, (Director of Food Service, Rice University, Houston), will be glad to furnish details on request.

Remember, the more complete the records, the better the report of activities, which starts a chain reaction of increased interest of members.

The **Virginia Dietetic Association** is doing an outstanding job coordinating efforts with the Virginia Health & Medical Care Council. As the director of that organization contacts schools throughout the state, she refers students whose particular interest is in dietetics to the Virginia Dietetic Association. Each is then followed up through contacts made, or arranged by the career guidance committee. This type of activity insures statewide coverage instead of restriction

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There may not be a bull in your china stock but you *can* count on its getting some pretty mean treatment. Sani-Stack is built for rough treatment.

Sani-Stack's "Straight 8" steel frames take all the punishment you can dish out. Extra bracing keeps Sani-Stack in shape. For uniform strength, every joint is automatically welded. Toughest plastisol, made to Metro's specification, coats the insert to absorb shocks. Individual pieces of china and glassware are cradled with loving care in separate compartments protected from breaking, chipping, cracking or scratching.

Sani-Stack's the rack that's best suited to preserve the newness and beauty of your china and glassware. The saving in china and glassware replacement will pay for Sani-Stack racks in no time. Then they are earning extra profits for you. "The Sani-Stack System" shows you how to cut your dish handling costs. Send for your free copy.

Over 30 years experience solving your dish handling problems.

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Eliminate this common dish handling problem with an AMF LOWERATOR Dispenser System

Contrast this haphazard dish "handling" method (above) with the modern, streamlined operation of the AMF LOWERATOR Dispenser System (right).

Dishes, glasses and trays are quickly and efficiently loaded into mobile AMF LOWERATOR Dispensers right at the dishwasher and wheeled directly to service locations. No rehandling. Breakage is minimized. And most important: time, money and manpower are saved.

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1. The convenience of a liquid! It pours! Frymax saves up to 20 minutes in filling kettles . . . no waste, no packing fat around coils. And Frymax stays liquid . . . easier to clean and to filter. **2. Economical! Longer fry life than ordinary solid fats!** Only Frymax contains Metsil—P&G's exclusive ingredient that reduces free fatty acid build-up, foaming, breakdown, gumming. Result?

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3 big advantages!

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to those areas in which *active* members reside or work.

Wyoming. The American Dietetic Association's spring conference with representatives of Wyoming, Nevada, Montana, Idaho, and New Mexico Dietetic Associations, is already bearing fruit. I was particularly interested in the June 1961 issue of the Wyoming bulletin, *The Range Rider*, which mentioned career guidance eight times (and by mentioned I mean paragraphs—not mere passing sentences!). Members of Wyoming Dietetic Association have joined with the Wyoming Home Economics Association in combined meetings and found a valuable outlet for use of the state-owned copy of "Take a Good Look." The Association has agreed to accept A.D.A.'s offer of $35 worth of free career guidance material—by so doing, accepting the responsibility to see that it is used. First distribution is to be in the Cheyenne, Laramie, Casper, and Sheridan areas.

Public Relations in the States

By HELEN G. INGERSON
A.D.A. Public Relations Chairman

Florida. The *Pinellas County Dietetic Association* (St. Petersburg) cooperated with the first "Health Futurama" fair. Sponsor was the Health Section of the Community Welfare Council on January 26. With regular school classes suspended, more than a thousand students from all over the county flocked to the fair between 10:00 a.m. and 3:30 p.m. for career films and exhibits, question-and-answer periods with professional persons, and free refreshments. Dietetics was included in the excellent pre-coverage television "spots," news, radio, flyers, "news-grams," and in the news stories which followed.

The dietetic booth showed pictures of the dietitian and her orbit of influence, featuring a project-o-graph of the hospital dietitian, the "Daily Food Guide" poster, and height and weight chart and scales. About eight hundred persons were weighed and given weight control information. All visitors received "Chart Your Course Towards Dietetics," and thirty especially interested students received *Dietetics as a Profession.*

As a follow-up, the dietetic association sent to counsellors: the names of their students who attended, health kits containing thirty-eight pamphlets about health careers, a list of professional people representing each career, a list of those interested in dietetics, and *Dietetics as a Profession.* All participants felt that the fair was an overwhelming success.

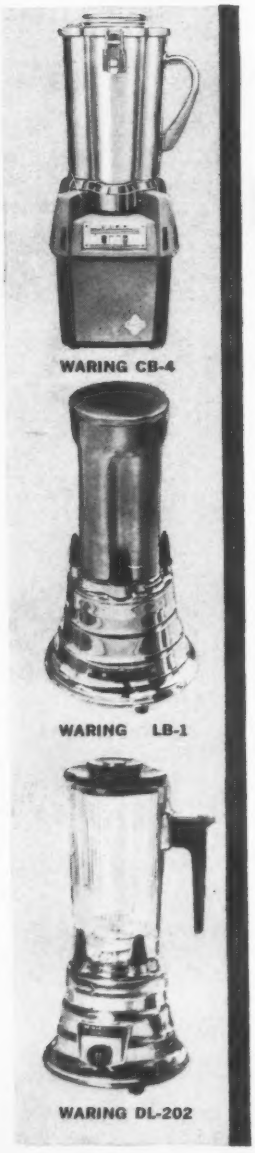
Kansas-Missouri. A "Health Fair" on a grandiose scale was held in Kansas City, March 18 through 26. The Fair, an educational adventure, was sponsored by the physicians of the Greater Kansas City Metropolitan Area.

The Missouri and Kansas Dietetic Associations each contributed $150 towards financing two exhibits sponsored by the *Greater Kansas City Dietetic Association.* The remaining $150 expense was raised by assessing the members of the local dietetic association who also manned the booth. An A.D.A. exhibit was used—"Dietetics—A Career with a Choice" (included slides to portray thirty job situations)—and A.M.A.'s "Nutrition Nonsense" was shown on diet delusions and food fads, the value of the various food groups in good nutrition, and a tape recording of house-to-house food supplement salesmen's "pitches" taken from actual government investigation.

Tours for school children, grades six through twelve, were held from 9:30 a.m. to 3:00 p.m. each day, and the exhibits were open to the public from 1:00 to 9:00 p.m. During the nine days, dietitians talked with students, teachers, and parents for a total of 144 hr. Over 101,750 attended the Fair.

Career materials were mailed to 582 students who requested more information. The dietitians feel that the time, money, and effort were well spent and that the Health Fair afforded an excellent opportunity to discuss dietetics as well as nutrition.

NOW...*Purée, Liquefy, Grate, Mix, Homogenize to meet diet food, tube feeding and laboratory requirements*



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FOR EXCELLENT, LOW COST PERFORMANCE. Many institutional users find this finest home-use model meets their requirements perfectly. A two-speed unit, it features the high torque 115 volt AC motor that assures ample blending power for practically any job. Comes complete with two-piece measuring cup lid and convenient detachable handle. Model DL-202.

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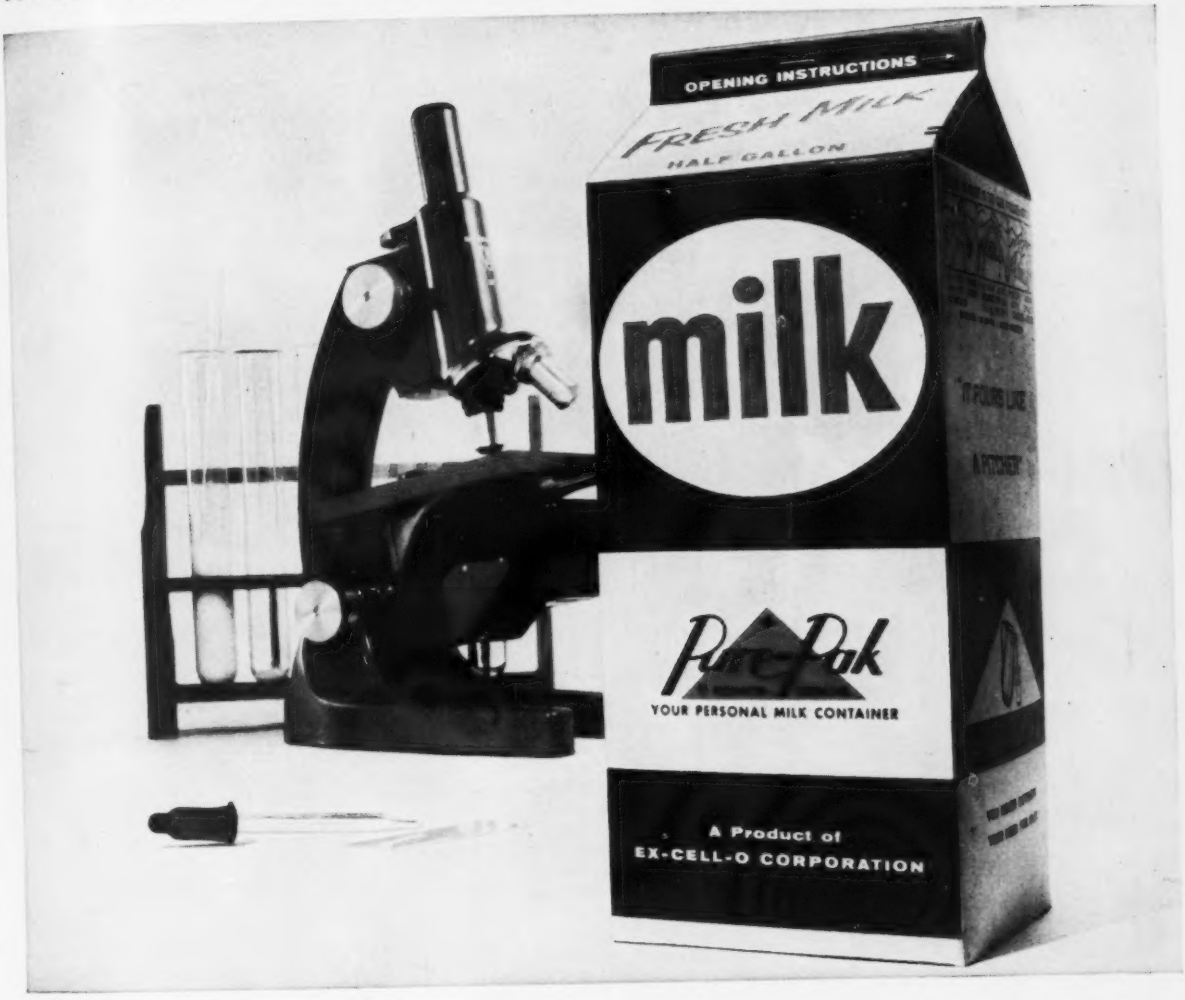

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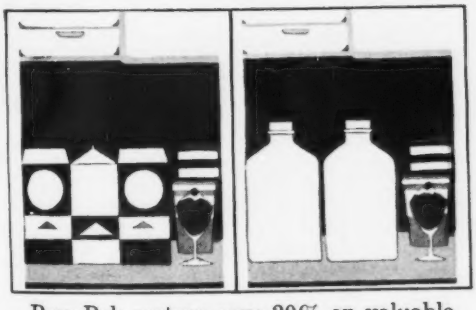

Pure-Pak cartons save 30% on valuable refrigerator space and eliminate wasted storage space needed for empty bottles.

Did you know that each Pure-Pak carton is formed and sterilized inside and out mere seconds before being filled? It's used only once, only for dairy products. And Pure-Pak has the exclusive gable top that protects the built-in pouring spout from dirt, water and other impurities. It pours like a pitcher . . . no drip, no dribble, no mess.

Cafeteria lines move quickly and smoothly when the handy half-pint size is used.

Ask your dairy supplier to deliver your milk in Pure-Pak cartons. Available in half-pint through half-gallon sizes.

Pure-Pak
YOUR PERSONAL MILK CONTAINER

28 million times a day, in 30 countries, someone breaks the seal on a fresh Pure-Pak carton

A special twelve-page section was published in the Sunday newspaper. The feature was devoted to health news and feature stories quoting noted scientists and doctors, and included "Nutrition Woes Amid Abundances," with comments of a dietitian and a nutritionist.

Association Activities

Eating Is Fun . . . for Older People, Too! This A.D.A. booklet has just been revised. The colorful new edition is enlarged and strengthened to assist managers of nursing homes and homes for the aging. Copies may be ordered from A.D.A. Headquarters office at the following prices:

Single copy	50 cents
Lots of 5	$ 2.25
Lots of 10	4.00
Lots of 50	17.50
Lots of 100 (F.O.B. Chicago)	30.00

A.D.A. Films. The Association has signed a contract with Modern Talking Picture Service for television distribution of the career film, *View from the Mountain.* The contract calls for 100 showings during the fiscal year. Members are urged to contact the program directors of their local television stations to call their attention to the free loan availability of the film. (The promotional leaflet to accompany the film contains a list of addresses of the offices of Modern Talking Picture Service.)

* * *

We hope you are following the example of some members who have made a project of showing the A.D.A. career slidefilm, "Take a Good Look," to school groups within their areas. The audiences reached are in junior and senior high schools and colleges. This 16-min. color slidefilm, with recorded narration, stresses many areas of dietetics and offers considerable information about the profession. Copies may be purchased for $15 through the A.D.A. office by both members and non-members. Loan prints are circulated by the regional offices of Association Films, Inc.: Broad at Elm, Ridgefield, New Jersey; 561 Hillgrove Avenue, LaGrange, Illinois; 799 Stevenson Street, San Francisco, California; and 1108 Jackson Street, Dallas, Texas.

* * *

"A Choice of Careers in Dietetics" —A.D.A.'s new career slide set—is being used in part to supplement the slide series developed by the home economics departments in two state universities. This is just an example of the many uses for which the A.D.A. slides are available. The series reflects many areas in the field of dietetics and can prove to be valuable to members who wish to familiarize audiences with the profession. The eighty-four slides comprising the set may be borrowed without cost, except for round-trip postage, from A.D.A. Headquarters office. They may also be purchased from the Association: glass-metal mounted set at $44; cardboard-mounted set at $17; or 44 pictures without captions, cardboard-mounted at $10.

Joint A.D.A.—N.L.N. Committee. Mary E. Kelly, Chairman of A.D.A. representatives, Frances N. Shoun, and Evelyn A. Carpenter attended a meeting of the Joint Committee of A.D.A. and the National League for Nursing in New York City on August 18. Ruth M. Yakel attended ex-officio.

Ways of furthering the exchange of information about activities of the two associations at the national level were discussed, as well as plans to encourage the formation of more city and state joint committees. It is anticipated that teaching dietitians on faculties of nursing education will be able to ask for help from local committees in solving problems.

The statements concerned with the appropriate outcomes of basic education for nursing are being prepared for publication.

Arrangements were discussed for exchanging articles and other pertinent information between the two organizations at the state level.

Third A.D.A. Management Seminar. Twenty-eight members attended the

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Stainless steel cover has special heat-trap design
Dri-Heat Hot Plate accommodates any standard china or plastic dish
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"Too many cooks can spoil the broth"... and your cost control picture as well.

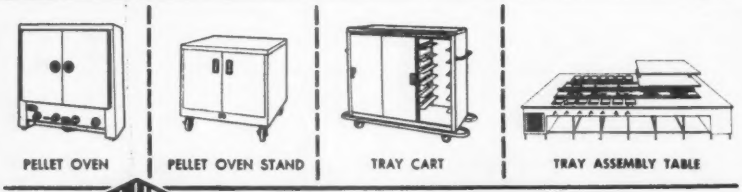
With Dri-Heat centralized feeding you no longer need "too many cooks." Instead you keep costs down to a minimum by eliminating duplicate efforts in several kitchens—and you end food waste. Best of all, you can increase menu variety and improve the "patient appeal" of all the food you serve.

Dri-Heat makes all this possible with a fully integrated system. Food is assembled on Dri-Heat assembly tables . . . in Dri-Heat hot plates (using Dri-Heat Pellets, Pellet Ovens and Oven Stands) . . . then it is carried to the patient in piping-hot, deliciously fresh condition in Dri-Heat Traycarts. And remember, the heat source stays with the food after it has been delivered to the patient so that food stays hot until consumed. No more "cold food complaints!"

You can use all or part of the money-saving Dri-Heat system depending on your present equipment. Get full details today.

Heart of the Dri-Heat system . . . the finest hot-plate made!

Quality is immediately apparent in all Dri-Heat products—and especially in this magnificent hot-plate. Scientifically engineered to provide air circulation around *all* sides of the heated pellet, it keeps food hotter. The heavily insulated, double-wall bottom shell stays cool to the touch. No soldered joints to come apart or break loose!



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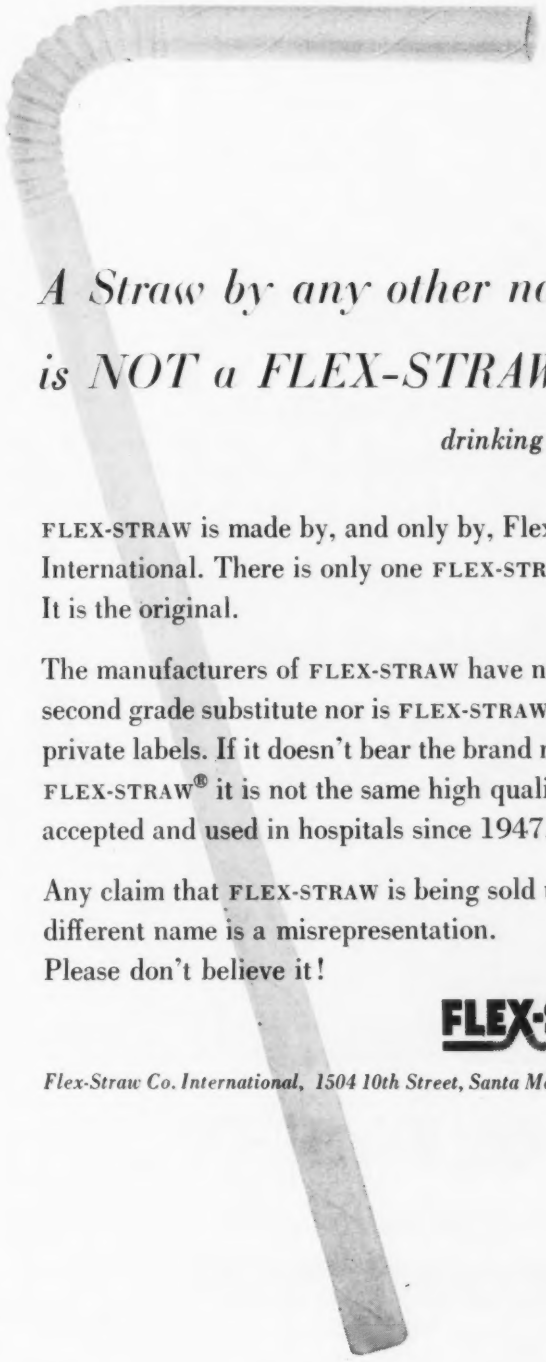

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Third Management Seminar sponsored by the Association at the University of California, Berkeley, July 31 to August 5.

Three faculty members were from the School of Business Administration and one from the Department of Psychology. Administrative process and organizational behavior were discussed in some detail. This included such topics as the present state of organizational theory, the assignment of activities to personnel, the development of policy statements, and management personnel selection.

Theories of decision-making under certainty, risk, and uncertainty; operations research, including the search theory; queuing; linear programming; transportation format; and simulation were reviewed. It was interesting that some of the research of A.D.A. members being conducted in conjunction with industrial engineers is in this area.

The role of computers in decision-making today and their future was another interesting subject.

The group was exposed to some of the tools of economic analysis and the quantitative evaluation possible through accounting and statistics. Financial management was defined as accounting from management's point of view. Figures in accounting are tools, and the scientific approach should be used in looking at them. Procedure and terminology used by accountants brought some new vocabulary as well as meaning to the group. Figures are the thinking of management and one should work with them so that they will be meaningful and reflect true pictures of situations.

Other subjects presented were related to human relations and communication. The use of interviewing and counseling in personnel work was discussed. It was suggested that interviews should be fact finding and can be used to produce behavioral change on the part of the individual being interviewed.

The needs of people and how to encourage them to work toward the goals of the organization and of the department were considered. In discussing the role of the professionally qualified dietitian, the need to delegate was evident. To delegate successfully, it was suggested one must have trust and must give freedom to the individual. In true delegation, as little checking as possible (if at all) is done while a job is being done, but the manager and operator would check and evaluate after performance.

AHEA-A.D.A. Joint Committee on Rehabilitation. Mary Zahasky, Chairman of A.D.A. representatives, Mary Egan, and Mary Reeves, were our representatives at a meeting of the new American Home Economics Association—A.D.A. Joint Committee on Rehabilitation, in Cleveland, June 26 and 27. Elizabeth E. May, Ph.D., Dean, School of Home Economics, University of Connecticut, Storrs, an AHEA representative, is Chairman of the Committee and Mrs. Zahasky is Co-Chairman.

The Committee's concern is the home economist in rehabilitation, including, but not limited to, the rehabilitation of the physically handicapped homemaker. Major activities being considered by the group are: finding out what home economists are doing in rehabilitation; informing and alerting home economists to their potential contribution in rehabilitation; and interesting other members of the rehabilitation team in the contribution and role of the home economist and the place of home economics in rehabilitation.

A.D.A. Exhibits. Our Association exhibited at the following national meetings this spring and summer:

OHIO. Members of the Cleveland Dietetic Association served as booth attendants when A.D.A. exhibits were presented at two conventions. Marilyn Farrand was local booth chairman for the *National League for Nursing* meeting, held April 10 through 14. The exhibit shown was concerned with diet therapy, "Adequate Low Calorie Diet—Diet Therapy."

Phyllis Folda was the chairman for the exhibit at the *American Home Economics Association* meeting, also held in Cleveland, June 27 through 30. A "career" exhibit was presented utilizing Kodachrome slides, "Career Choices in Dietetics."

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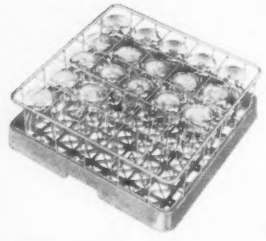
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Whatever the main course, you can add new sparkle to every part of the meal with this simple tip.

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When cooking any green vegetables, use Custom Pure Chicken Base as a seasoning instead of butter. Or, try adding a touch of this unique chicken base to mashed potatoes. It works wonders.

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Build your reputation around this flavor-packed egg specialty.

CUSTOM SCRAMBLED EGGS

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MICHIGAN. Marguerite Marchese was booth chairman when our Association presented an exhibit at the *Catholic Hospital Association* convention in Detroit, June 12 through 15. The light-weight display on weight control, "You Can Lose Weight Safely and Pleasantly," was shown.

NEW YORK. Members of the Greater New York Dietetic Association represented A.D.A. at an exhibit shown at the *American Medical Association* convention, June 26 through 30. Dorothy Kinnear was local booth chairman, assisted by Clara Zempel of Headquarters office. The exhibit presented "Hospital Food—Then and Now." It illustrated the contrast between hospital food in 1799 and today. Over 64,679 attended this meeting, of whom 23,083 were physicians and 7,379 were industrial exhibitors. Our Association's exhibit was one of 385 scientific exhibits.

COLORADO. Shirley Craighead handled local arrangements for the A.D.A. exhibit at the *American School Food Service Association* meeting in Denver, July 30 through August 3. "A Good Lunch," the food model exhibit illustrating the importance of the school lunch in a student's daily nutrition pattern, was shown.

The Association wishes to express its appreciation to all of the members who so generously participated in manning these exhibits.

Obituaries

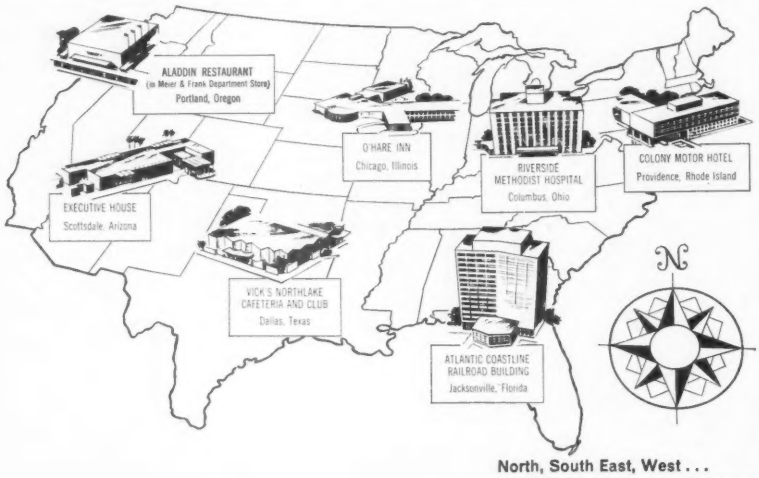
Mary Edith Huhn. The Association lost another of its early members with the death of Mary Edith Huhn on August 16. Miss Huhn became a member in 1918 and was the eleventh member to take out life membership (1929). For forty-two years, she was dietitian at Moses Taylor Hospital, Scranton, Pennsylvania. She had made her home in Saranac, Michigan, since her retirement in 1948.

Norman H. Jolliffe, M.D. News of the death of Dr. Norman H. Jolliffe, New York City, on August 3 has reached the A.D.A. office. Dr. Jolliffe was well known as a researcher and long-time Director of the Bureau of Nutrition of the New York City Health Department. In his work with obesity, the area of his special interest, he developed the "appestat" theory to describe an appetite-regulating mechanism located at the base of the brain. He was the author of the popular lay books, *Reduce and Stay Reduced* and *The Reducing Diet Guide.* He had served as President of the National Vitamin Foundation and consultant to the Interdepartmental Committee on Nutrition for National Defense, and had been a member of the Food and Nutrition Board of the National Research Council.

Wanda Ransom McClelland. The A.D.A. office has learned of the death of Wanda Ransom McClelland on December 20, 1960. Mrs. McClelland, who had been a member since 1943, made her home in Broomfield, Colorado. Her career included positions with several California institutions: Methodist Hospital, Los Angeles; Los Angeles County General Hospital; and Pomona Valley Community Hospital, Pomona.

News of Products and Services

Extensive tests by the Wisconsin Alumni Research Foundation and by 104 dietitians who served over 5,000 hospitalized patients were made of "Merimix," a new egg custard dessert mix developed by *The Dietene Company.* The product is made of natural ingredients with no fillers added, has a smooth texture and full flavor. In comparison with standard quantity recipes for custard, Merimex contains slightly more protein, is lower in fat and cholesterol, and is fortified with additional vitamins and iron. Based on cost figures taken from USDA, savings approximate $1.30 per 100 servings. The mix is available in 5-lb., double polyethylene and foil-lined



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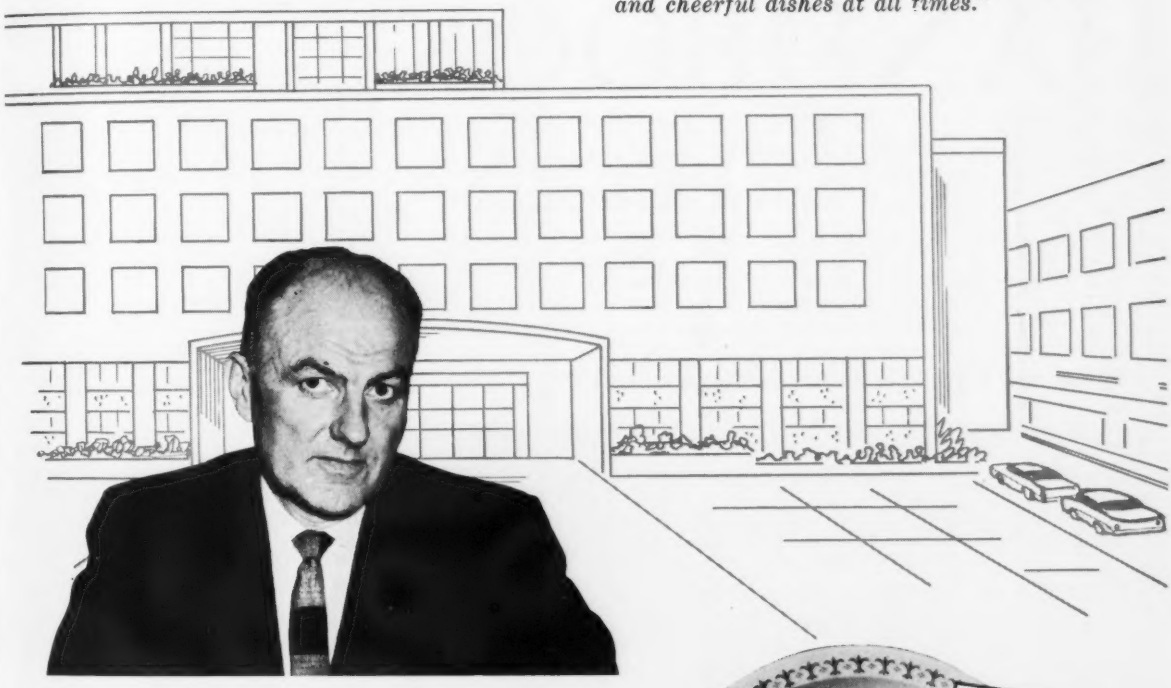

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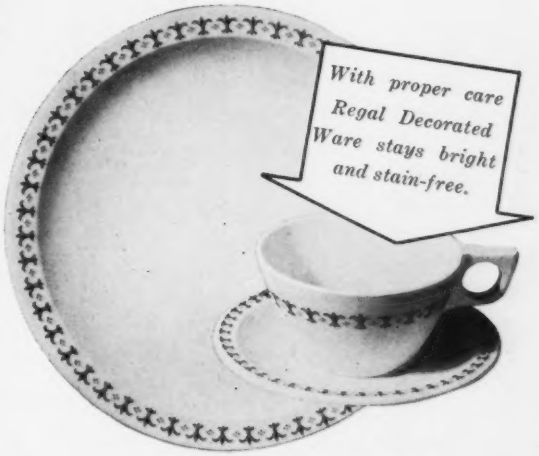

ST. MARY'S HOSPITAL SELECTED THE POPULAR "FLEUR-DE-LIS" PATTERN

REGAL WARE • DALLAS WARE • TEXAS WARE are products of
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bags which need not be refrigerated after opening. Each bag makes 100 4-oz. servings. By adding water, mixing, and baking, the custard is ready to serve. Variations of the custard desserts are available in a set of quantity file cards.

A new Univex 12-qt. portable bench model mixer from *Universal Industries* features standard equipment bowl, beater, and whip. A speed selector dial permits variable speeds of from 100 to 430 R.P.M. It is a plug-in appliance less than 2 ft. high.

Work-saving adaptability has been provided in a new Univex 30-qt. floor model mixer by *Universal Industries*, which is capable of holding 12- and 22-qt. bowls as well as the standard 30-qt. The screw-type adjustable bowl control makes it easy to lift or drop any size bowl. The large 30-qt. bowl can be dropped conveniently and easily onto a dolly. Heavy or light batches may be mixed; the beater rotates on its axis opposite to the direction in which it moves around the bowl. The unit is equipped with a power attachment for meat chopper and vegetable slicer. An automatic timing switch shuts off the mixer at selected time.

Middleby-Marshall Oven Company offers, in its 1961 model, radically new features including a new control system, modulating heat, and a new concept in drive systems, designed to give vibrationless start-and-stop with constant-running motor and rheostatic adjustment. The oven has been restyled but will continue to feature its stabilization system, electric push-button ignition, special steaming facilities, automatic tray stop-and-start with interval timer, variable speed, and emergency hand operation. Heat and moisture distribution are scientifically controlled. Standard sizes run from 10 to 38 trays finished in combination porcelain and stainless steel.

Modulating heat control on its larger sizes is a new feature in *Middleby-Marshall's* 1961 heavy-duty, revolving tray ovens. Dual vent, electronic controls, double stabilization, inner walls of aluminized steel, push-button electric ignition are also featured. Revolving tray ovens range in capacity from 8 to 80 pans, with semi-indirect or recirculating heat systems for gas, oil, or electricity.

The last leaflet in the "15 series" from *National Canners Association* features snacks. Following the trend of combining leisure time and the serving of food, "15 Snack and Party Recipes" contains eight pages of recipes using canned and convenience foods for make-ahead or 5-min. snacks. Pictures illustrate ways of serving.

A new automatic unit for controlling the amount of rinse additive used with mechanical dishwashers has been announced by *The Diversey Corporation*. The new Rinsemaster Model 30 assures a continuous, automatically controlled rate of flow, regardless of changes in water pressure or volume. Only one adjustment is needed to maintain proper solution strength. The unit contains no moving parts and is rustproof and corrosion resistant. It has been designed especially for use with Diversey Zerospot rinse additive, which reduces surface tension of the rinse water and provides spot-free glassware, silverware, and dishes without toweling.

A food and water survival kit capable of sustaining one person for fourteen days is now available from *Surviv-All, Inc.* The 24-lb. kit contains a basic nutrient, Multi-Purpose Food; 14 qt. of vacuum-packed water; ascorbic acid supplement; and necessary utensils. The kit meets the specifications of the Office of Civil and Defense Mobilization and has a shelf life of three to five years.

A 14 by 10 in. illustrated chart, "Salting to Measure Adds to Flavor" is obtainable from the *Salt Institute*. Prepared by home economists, the proper amounts of salt to be used in preparing pastry, breads, meat, fish, poultry, vegetables, and sauces, as well as for home canning and candies, are shown. Copy also explains how salt serves to flavor foods and includes tasty tips on what to salt, when to salt, and how much.

At the American Public Relations Association's seventeenth annual convention in Atlantic City in May, the Packaging Equipment Division of *Ex-Cell-O Corporation* received the Silver Anvil Award, the highest tribute in the public relations profession for its support of Project Hope. Ex-Cell-O's

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The handbook includes new chapters on diet during pregnancy, adolescence, and old age; on energy expenditure; on fatty acid modifications; and on phenylalanine restrictions.

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Photos #2, 3, 4—Polk State School, Polk, Pa.

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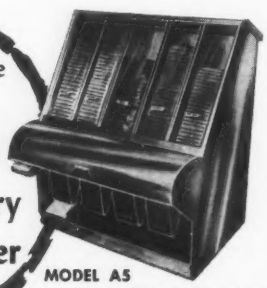

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Meals-on-Wheels is offering a newly designed buffet-type unit called "Dine-Line," composed of three units: one for dishes; a cold section for salads, appetizers, and other foods; and a hot food unit for entrées. A fourth unit may be added if roast beef or similar meats are served at the end of the line. The Dine-Line is designed to serve customers on a self-service basis from both sides of the unit. The unit is shipped in complete sections for quick assembly, and individual sections may be equipped with locking wheels for mobility. There is a stainless steel top with sneeze guards and lights over the hot and cold food units. Easy-to-clean side panels are available in decorator colors.

A new bussing cart is also available from *Meals-on-Wheels* which accommodates five 14 by 18 in. trays. Side panels conceal soiled dishes. The unit is made of stainless steel and has rubber bumpers on four corners.

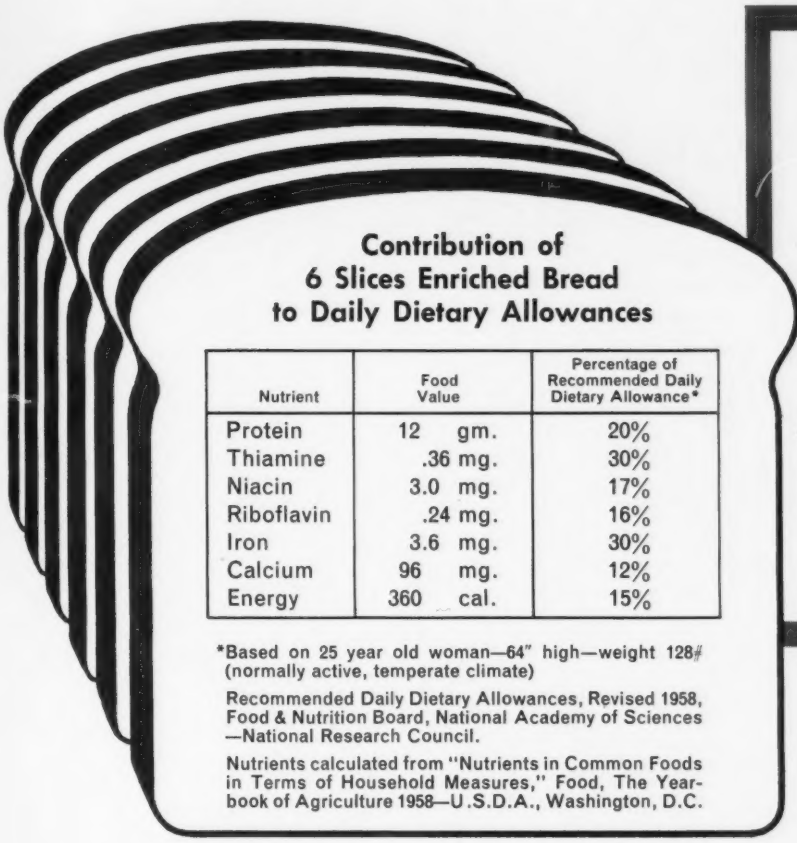
A variety of "table ready" meats are available from *Swift & Company*, including: "Cooked Beef Patties with Gravy" frozen and packed in 3-lb. cylinder cartons; "Heat-in-Bag Barbecue Sauce with Sliced Turkey" in 8-oz. pouches, twelve to a carton; and "Brown 'n Serve Sausage."

Universal Foods Corporation is offering gelatin desserts in which the flavor is released when boiling water is poured over the "flavor buds." The product contains pure cane sugar to provide clarity. Texture and appearance have appetite appeal.

The new Vimco stainless steel refrigerator model, RS-40-S, manufactured by *Victory Metal Manufacturing Corporation*, features interiors that can be easily interchanged or rearranged in minutes, without tools. It may be equipped with pull-out or stationary shelves, adjustable-type pan slides, pull-out or stationary meat rails, or pull-out pan supports and ball-bearing drawers. With the pull-out accessories, it is estimated that 50 per cent more space is saved. Controlled air flow assures uniform temperature and air distribution. Higher humidity reduces shrinkage loss. All units have automatic defrosting. Refrigerators are available in 1-, 2-, 3-, and 4-sections in normal temperature, combination normal temperature and freezer, and freezers in self-contained, remote and pass-through models.

Wilson & Co. has announced the appointment of Ruth M. Glass as Director of Home Economics.

for good health -



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Nutrient	Food Value	Percentage of Recommended Daily Dietary Allowance*
Protein	12 gm.	20%
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Riboflavin	.24 mg.	16%
Iron	3.6 mg.	30%
Calcium	96 mg.	12%
Energy	360 cal.	15%

*Based on 25 year old woman—64" high—weight 128# (normally active, temperate climate)

Recommended Daily Dietary Allowances, Revised 1958, Food & Nutrition Board, National Academy of Sciences —National Research Council.

Nutrients calculated from "Nutrients in Common Foods in Terms of Household Measures," Food, The Yearbook of Agriculture 1958—U.S.D.A., Washington, D.C.

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In 1941, nutrition authorities decided to add iron and B-vitamins thiamine, niacin and riboflavin to flour and bread. Since 1941, deficiency diseases attributed to lack of those vitamins have all but disappeared in America.

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Single copy 50¢

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An improved single-tank automatic conveyor dishwashing machine has been announced by *Insinger Machine Co.* The Admiral 120-5 will service up to 400 diners per meal and features radius hood construction with an easy-to-clean, deep-drawn, cove-cornered, seamless 14-gauge tank. Internal castings are made of non-ferrous nickel alloy that resists corrosive detergents. The interior includes stainless steel suction and discharge lines, tracks, scrap screens, spacers, and spray pipes. Self-draining brackets and cornerless design allow easy cleaning.

Heavy-duty stainless steel dishers by *Hamilton Beach Company* speed the serving of food in large volume situations—from mashed potatoes to ice cream. A patented hinge pin prevents scrapper blade pop-out. A machine-sharpened bowl edge and thumb-fitting ejector handle provide easy and comfortable operations.

A new, compact-size, high-capacity gas pizza oven has been introduced by *Bakers Pride Oven Co., Inc.* It has two genuine brick hearths, 2 in. thick with a baking capacity of five 12-in. pizzas or two 16-in. pizzas every 4 min., and a pan baking capacity of six 12-in. pizzas or two 16-in. pizzas every 4 min. Baking temperature is automatically controlled by a thermostat, safety pilot, and shutoff. All units are available in stacked models and can be equipped for any type of gas required: manufactured, mixed, natural, or bottled.

A heavy-duty "3-Way Charco-Broiler" which broils, grills, braises, and toasts has been introduced by *Bakers Pride Oven Co., Inc.* A full-size Charco-Broiler features: Baker's Pride exclusive "pin-point" cast iron grate for broiling hamburgers, steaks, chicken, or frankfurters; a flat grill plate that can replace or be placed over the grate for frying; and a braiser-toaster to be used for toasting buns, braising, and pan-broiling seafoods. The unit utilizes an air-cooling principal assuring comfort, even under full-load capacity. An internal grease drain system runs the entire length of the unit. New type burners work efficiently with all types of gas, and the convenient gas feed connection allows flush installation.

Du Bois Chemicals, Inc., has introduced Mir-A-Kol, a liquid detergent for commercial machine dishwashing. Based on a new detergent principle, the liquid is said to have extra cleaning power, greater soil lifting, and grease emulsification, and to provide greater rinsability.

Du Bois Chemicals has announced two other new products, "Wax-Away," for de-waxing; and "Prestige," containing new floor brighteners, not waxes. Wax-Away is made especially to remove water-resistant polymeric (plastic) polishes. It will not harm color resiliency of any floor, is low foaming for use in scrubbing machines or with a mop, and it rinses completely in hard or soft water. Prestige, it is claimed, will outlast wax and other floor polishes on all kinds of floors, cutting waxing and retreating costs as much as 60 per cent in a year. Prestige is approved by Underwriters Laboratories for safety under foot.

"DuPan," a new formulation of synthetics which gives more cleaning action and lower use costs than pot and pan powdered compounds, is also new with *Du Bois*. DuPan is highly soluble, requiring less than 1 oz. per gallon water for pot, pan, and hand dishwashing.

A convenient recipe card packet of institutional recipes is available from *Lawry's Foods, Inc.*, each recipe featuring a Lawry product. Cost breakdown cards for all recipes are included. Each card gives the ingredients in weight or measure and the yield per serving. Recipes for poultry, casseroles, dressings, and salads are included.

A new butter substitute, "Whipstix," has been developed by *Hotel Bar Foods, Inc.* Whipstix is fluffed with air bubbles. It is estimated that one-third less Whipstix is thus used; the product is more tolerant of temperature changes; not quite as hard in the ice box and not quite as soft in the mixing room. Doughs were mixed in about 20 per cent less time because air is already incorporated in the whipped butter. A taste-testing panel could find no difference between pound cake made with regular butter and with Whipstix. Whipstix can be used volume for volume with regular butter when baking.

The Sugar-Stack, a new metal wire rack for stacking individual sugar packets, has been introduced by *Will-Sell, Inc.* A two-compartment unit holds seventeen packets on each side. In table use, the open-end design permits customers to serve themselves without disturbing the remaining packets. The rack is available in heavy-duty chrome or brass finish.

Continental Coffee Company's improved Orange Drink Mix consists of pure dehydrated orange juice and "sealed-in" orange oils, providing truer flavor and color. The mix is available for institutional use in mechanically-agitated or bowl dispensers.

A six-page folder from the Information Bureau of the *American Spice Trade Association*, "What You Should Know about Cinnamon," informs users that cinnamon should be stored in a cool, dry place. Excessive heat will volatilize and dissipate its aromatic essential oils, and high humidity will tend to cake it. Other interesting facts are designed specifically to answer typical questions from users of cinnamon. The true difference between the terms "cinnamon" and "cassia" is explained. Technical descriptions of all major types of the spice on the market are listed.

Pan-American Coffee Bureau has issued a new eight-page, illustrated booklet, "The Coffee Break. A National Institution." In it, the psychologic and sociologic implications of the coffee break are discussed.

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